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Catalogue of the described **TENTHREDINIDÆ** and **URO CERIDÆ** of North America.

BY EDWARD NORTON.

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—o—

Lanceolate cell closed in middle.

31. **NEMATUS.***Nematus*, Jurine, Nouv. Meth. 1807, 59.

Leach, Zool. Misc.

Lepel, Mon. Tenth. †††, 62.

Hartig, Die Blattw. Sec. 2, Tr. 2, 184.

Wings ample, one marginal and four submarginal cells, the first and third small, the second large and receiving two recurrent nervures; the first generally rounded, with the dividing nervure sometimes very indistinct, only to be seen by holding up to the light; four submarginal bullæ, viz.: one in middle of each transverse nervure and a long one on the submarginal vein beginning at the first recurrent nervure, and that on the third transverse nervure quite wide; lanceolate cell petiolate; under wings with two middle cells.

Antennæ 9-articulate, elongate, slender, simple, third article generally largest, remainder gradually decreasing in length.

Head transverse; clypeus emarginate; mandibles with one inner tooth; fourth joint of maxillary palpi not short; the inner lobes of maxillæ with a tooth-like edge or pectination. A suture-like groove generally passes down the face from summit on each side of ocelli, connected back of ocelli by a cross groove, more or less distinct. Between the antennæ a ridge, channeled above, is produced.

Body short, subcylindric in the males, broader and depressed in the females.

Legs simple; two sharp spines at the apex of tibiæ; claws in general with an inner tooth.

Larvæ twenty-footed (six pectoral, twelve abdominal and two caudal). They present quite a variety of habits, as will be seen by the following table. (Dahlbom.)

- a. Feeding upon leaves of plants, gooseberry, willow, &c., resting at the edges or on the surface of leaves.
- b. Feeding upon the leaves of pines, social; resting at the edges of leaflets, forming a simple cocoon.
- c. Living in galls of plants. c. 1.—Gall-makers, Walsh.
2.—Inquilines, Walsh.

They are generally social in habit and are often very destructive, eating off all the leaves.

The cocoon is simple, egg-shaped. It is sometimes fastened to stems, lies sometimes on the surface of the ground, sometimes in the earth.

Westwood (Mod. Class. of Insects) mentions the European species which attacks the gooseberry (*N. grossulariæ*) as having been seen in as large numbers as a thousand on a single bush. Other species are found upon the cherry, willow and elm.

Westwood refers also to the larvæ of several species which are solitary in their habits, and others which form woody galls upon the stem and also in the spongy rib of the leaf. In some of these galls but one individual resides, and in others more than one in each gall. These galls have mostly been observed upon the willow in Europe. In this country Mr. Walsh has described a number of species bred from various galls, mostly on the willow, and has made the further remarkable discovery, that not only are some of these galls makers but others are parasitical in the galls of other insects. He has found, too, that many of these are so much alike in the imago state, that it is almost impossible to separate them. It is difficult to give a hearty assent to Mr. Walsh's "Inquilines or Guest-flies," without further investigation.

Many species have two broods in a season, of which the first is doubtless the most productive.

This is the most difficult genus of this family, because the species are so numerous, (Hartig enumerates about fifty species in Europe,) and presents so few salient points of difference, either in form or color.

In addition to this, most of the species here named are described from but one or two specimens, so that we have abundant room for future corrections.

Dr. Hartig has joined to this genus several sub-sections, under different titles.*

* Hartig, Die Blattwespen, &c., p. 179.

1. *Nematus*.—Wings, one marginal and three or four submarginal cells.

Subgenus.—1. *Nematus*.—Wings, one marginal and three or four submarginal cells.

Sec. 1.—*Leptopus*. Lanceolate cell closed in middle.

Sec. 2.—*Nematus*. Lanceolate cell petiolate.

Tribe 1.—*Creasus*. The first joint of hinder tarsi as usual.

Tribe 2.—*Nematus*. Last joint of hinder tarsi as usual.

2.—*Cryptocampus*. Wings, one marginal and three submarginal cells.

Sec. 1.—*Cryptocampus*. Body lengthened, cylindrical.

Sec. 2.—*Diphadnus*. Body egg-shaped, short.

Tabular Synopsis to assist in finding the species.

1. Head above the antennæ black.
 - A. Body and legs black.....1, *concolor*.
 - B. Thorax black.
 - a. Abdomen black.
 1. Tegulæ and trochanters black.....2, *Labradoris*.
 2. Tegulæ and trochanters pale.....3, *malaous*.
 - b. Venter more or less pale.
 1. Tegulæ and trochanters black.....4, *extensicornis*.
5, *marylandicus*.
6, *fallax*.
 2. Tegulæ and trochanters pale.....7, *suratus*.
8, *winnipeg*.
30, *ventricosus*.
9, *monela*.
10, *subalbatus*.
11, *corniger*.
12, *luteolus*.
 - c. Abdomen banded with rufous.24, *erythrogaster*.
 - C. Thorax black, pectus pale.....13, *Saskatchewan*.
 - D. Thorax pale, a black spot on pectus.....44, *bivittatus*.
 2. Head above antennæ more or less pale.
 - E. Thorax black.
 - a. Venter more or less pale.
 - Trochanters black.....14, *violaceipennis*.
15, *nigritus*.
 - Trochanters pale.....16, *ventralis*.
17, *longicornis*.
18, *proximatus*.
11, *corniger* ♀.
19, *pallicornis*.
20, *obscurus*.
21, *S. pisum*.
 - b. Abdomen banded with red or yellow.....22, *brunneus*.
23, *rufofasciatus*.
25, *luteotergum*.
26, *fur*.
27, *Hudsonicus*.
 - F. Thorax black, pleura pale.....28, *sumptus*.
29, *pleuricus*.
30, *ventricosus*, ♀.
31, *lateralis*.
32, *desmodioides*.
33, *fulvipes*.
 - G. Thorax mostly pale.....34, *crassus*.
 - a. Pectus black, a pale spot in middle.....35, *placentus*.
 - b. Pectus pale.
 - Thorax trilineate with black, pleura with two spots...36, *inquilinus*.
pleura with one spot.....37, *longulicornis*.
scutel black.....38, *trilineatus*.

Thorax trilineate with black, scutal pale.....	39, <i>vertebratus</i> .
	40, <i>integer</i> .
	41, <i>S. pomum</i> .
	42, <i>hospes</i> .
	43, <i>trivittatus</i> .
Thorax bilineate with black.....	45, <i>aureopectus</i> .
	46, <i>mendicus</i> .
Metathorax and part of tergum black.....	47, <i>chloreus</i> .
	48, <i>stigmatus</i> .
H. Thorax and abdomen pale.....	49, <i>monochroma</i> .

1. *Nematus concolor*, n. sp.

Wholly black; wings subhyaline, with a violaceous tinge. Length .24. Br. wings 0.54 inch.

♀. Black; antennæ rather stout; head rather coarsely punctured; thorax with shallow, confluent punctures; nasus smooth, with rounded notch before, its edge and the labrum reddish-white; abdomen ovate, short; legs black, anterior tibiæ and tarsi dull piceous, inner claws large; wings with a violaceous tinge, nervures piceous, second submarginal with two angles beneath, widest at the first, a bulla covering most of first submarginal cross line and another at the reception of the first recurrent nervure or submarginal nerve extending along the nerve.

♂. Antennæ long and slender.

Connecticut; Albany, N. Y., Dr. Peck. (One ♀, one ♂.)

2. *Nematus Labradoris*, n. sp.

Shining black; tibiæ pale; wings hyaline. Length 0.24—0.32. Br. wings 0.56—0.76 inch.

♀. Black; body stout, as in *Selandria*. Antennæ moderate, flattened; all the joints of nearly equal length; nasus moderately emarginate, face black; labrum piceous; tegulæ black; abdomen ridged down the back, apex pale; legs black; apical half of anterior femora beneath and all the tibiæ, except tips of hinder pair dull white; inner spur of anterior tibiæ large and blunt, tibiæ pilose; second tooth of claws as large as first; wings ample, hyaline, nerves brown, stigma and costa pale greenish; second submarginal with two angles beneath, widest at first; the second recurrent nervure received very near the second submarginal nervure.

♂. The male is quite slender and the antennæ longer and more slender.

Labrador, (A. S. Packard, Jr.) Two ♀, one ♂.

One of the females is not more than half the size of the other, but preserves the same characteristics.

3. *Nematus malacus*, n. sp.

Black; tegulæ, trochanters and legs below knees pale. Length 0.23. Br. wings 0.60 inch.

♀. Shining black; body short and stout; antennæ slender; joints of nearly equal length; lower ocellus in a shallow basin; nasus hardly incurved; tegulæ and collar whitish; coxæ, femora, tips of posterior tibiæ and of all the tarsi black; claws slightly dentate within; trochanters, anterior femora before, tibiæ and tarsi, except at tip, white; wings hyaline, stigma and costa pale greenish, second submarginal widest at first recurrent nervure.

Labrador, (A. S. Packard, Jr.) Three ♀.

4. *N. extensicornis*.

Nematus extensicornis, Norton, Proc. Bost. Soc. viii, 1861, 159, ♂.

Black; tip of venter yellow-red; knees and tibiæ pale. Length 0.27. Br. wings 0.60 inch.

♂. Shining black. Antennæ as long as body, slender, cylindrical, punctured, pilose with upright hair, joints slightly globose at tip, third hardly as long as fourth; lower ocellus in a basin; nasus retracted, with a shallow, wrinkled notch in the middle; apical third of venter and anal styles pale fulvous; legs black; the knees, tibiæ and tarsi reddish-white, the latter darker above, claws yellowish, with a very short inner tooth (slightly dentate). Wings hyaline, stigma and costa pale, second submarginal widest at first recurrent nervure; second recurrent nervure received at or very near the intersection of second and third cells.

♀. Antennæ about two-thirds the length of body, tips of joints not so much enlarged, third and fourth joints of equal length, edge of nasus and labrum yellowish; legs below the knees darker, stigma and costa white.

Mt. Washington, N. H. Summit. One ♂, one ♀. (S. H. Scudder and Baron Osten Sacken).

5. *N. marylandicus*.

Nematus marylandicus, Norton, Proc. Ent. Soc. iii, 1864, 7, ♂.

Black; apex of abdomen rufous, knees and part of tibiæ whitish; wings hyaline. Length 0.28. Br. wings 0.60 inch.

♂. Black; body long and not stout; antennæ as long as body, slender, cylindrical; joints not so much enlarged at tips as in *N. extensicornis*, pilose; head and thorax with short whitish hair, that on labrum longer, brownish; lower ocellus in a basin, which is open at top and bottom; nasus with a deep, angulate notch; apical segment of abdomen yellowish piceous, most apparent beneath; legs black, their four anterior knees, tibiæ and tarsi beneath and at base above, and basal half of posterior tibiæ whitish; nails piceous, tips red. Wings hyaline, stigma and costa pale; second submarginal widest at

angle receiving first recurrent nervure; second recurrent nervure received just within third submarginal cell.

Maryland. One ♂. (Coll. Am. Ent. Soc.).

6. *Nematus fallax*, n. sp.

Black; mouth, cheeks, apex of venter and tibiæ in part, reddish-white; a black line down the tibiæ above, body slender. Length 0.18—0.20. Br. wings 0.44—.48 inch.

♂. Shining black; body slender; antennæ rather long and slender, ferruginous beneath; nasus hardly incurved and with mouth below, lower half of cheeks and apex of venter yellow-red. Legs at base black, below the base of femora yellow-red, with a blackish line down their upper side; inner anterior tibial spur stout; inner tooth of claw nearly as large as outer. Wings perfectly hyaline, iridescent; stigma somewhat rounded above and with the costa pale greenish.

Labrador, (A. S. Packard, Jr.) Two ♂.

7. *N. suratus*.

Nematus suratus, Fitch, Third Rep. N. Y. State Agr. Soc., 1859, 94.
Fitch, Nox. Ins., p. 68, 94.

"Black, with four transparent, slightly smoky wings; mouth, cloud-like spot on the shoulders, edges of abdominal segments and legs livid white; the four anterior thighs being black upon their under sides and the hinder pair wholly black, except at their base. Length 0.25 inch, to the tip of wing 0.30 inch."

New York. Not seen.

8. *Nematus winnipeg*, n. sp.

Black; abdomen at sides and apex beneath and the legs piceous; hinder femora and ends of their tibiæ blackish. Length 0.22. Br. wings 0.48 inch.

♀. Black; body short and stout. Antennæ about half the length of body, stout, a little flattened, third and fourth joints equal; head dull with coarse punctures, no distinct sutures or depressions about the ocelli; nasus not emarginate, labrum slightly indented before; edge of nasus, labrum, tegulæ and two edges of anterior angle yellowish; sides and apex of venter, ovipositor and the legs yellowish piceous; the coxæ, the four anterior femora at base and beneath, posterior femora and apical third of tibiæ blackish, inner claw-tooth blunt and widely separated from outer. Wings yellowish hyaline, stigma and costa yellow; second submarginal wide.

Lake Winnipeg, (R. Kennicott, Smiths. Inst.) Two ♂. This is much like *N. suratus*.

9. *Nematus monela*, n. sp.

Black; mouth, spot on cheeks, tegulæ, collar and venter pale; base of coxæ and of femora and tips of hinder tibiæ black. Length 0.20. Br. wings 0.48 inch.

♂. Black; body slender; antennæ slightly compressed, third joint hardly as long as fourth; lower ocellus in a small basin; nasus not emarginate; edge of nasus, labrum and spot at base of mandibles white; tegulæ, two edges of anterior angle and apex of venter yellow-red; legs yellow-red, trochanters white; base of coxæ, base of femora and a line beneath, extending nearly to tip, apex of posterior tibiæ and their tarsi black; inner apical tarsal spur blunt, inner claw tooth small and widely separated from outer. Wings hyaline, stigma and costa pale waxen color.

Labrador. Two ♂. (Mr. Packard).

10. *N. subalbatus*.

Nematus subalbatus, Norton, Proc. Ent. Soc. Phil. iii, 1864, 7, 10, ♀.

Length 0.28. Br. wings 0.62 inch.

♀. Black; body short and not very stout. Antennæ two-thirds the length of body, flattened, covered with a short hairy pile; third joint longer than fourth; lower ocellus in a shallow basin; nasus slightly emarginate; its edges, labrum and base of mandibles white; tegulæ, anterior angle, venter and legs (in part) white; base of coxæ, a band on all the femora, apex of posterior tibiæ, posterior tarsi and apical joints of all the tarsi black. Wings hyaline, apex and base of costa pale; second recurrent nervure coinciding with intersection of second and third submarginal cells.

Pennsylvania, (Coll. Am. Ent. Soc.) One ♀.

11. *N. corniger*.

Nematus corniger, Norton, Bost. Proc. viii, 1861, 159, 7, ♂.

Black; mouth, tegulæ, venter, bands on tergum and legs (in part) black.

♂. Length 0.17. Br. wings 0.40 inch.

♀. Length 0.25. Br. wings 0.58 inch.

♀. Black; body short and stout; antennæ more than two-thirds the length of body, slightly flattened and enlarged at joints, third joint longer than fourth; no distinct sutures about ocelli, the lower ocellus in a shallow depression; a faint piceous line on outer orbits; nasus slightly emarginate; edge of nasus and below and base of mandibles white; tegulæ, upper half of anterior angles, edges of tergum and obsolete bands at most of the joints and venter, except at tip, white; legs wholly yellow-red, with the tips of hinder femora and apical half of their tibiæ black; tarsi black, trochanters white; inner tooth of claw blunt and widely separated from outer. Wings hyaline, nervures and stigma piceous, costa at tip and base pale; submarginal nerve curved at second cell, hardly angulate, second recurrent nervure received near the intersection of second and third cells.

Var. a. ♀. The white markings reddish-yellow; antennæ at tip beneath piceous; coxæ white; legs below trochanters honey-yellow; tibial spurs very long and with the claws rufous. (Ct., N. Y.)

♂. Antennæ more flattened, fulvous beneath, third and fourth joints of equal length; a spot below antennæ and all the anterior angle white; the whole tergum black. (Conn., N. Y.)

Var. b. ♂. Colors reddish-yellow like *Var. a.*; lower half of anterior angle brighter reddish than the upper, with a marked dividing line; bands on tergum as in ♀; base of all the coxæ black. (Conn.)

Var. c. Tegulæ and upper half of anterior angle white, lower half black. (New Jersey.)

Var. d. Tegulæ and upper half of anterior angle rufous, lower half black; apical half of venter blackish; nasus emarginate; antennæ shorter. (New Jersey.)

Maine, Connecticut, New York, New Jersey, Pennsylvania, Illinois.

None of the males have any orbital spots.

12. *Nematus luteolus*, n. sp.

Black; mouth, tegulæ, anterior angle, apex of venter and legs (in part) rufous; coxæ and trochanters pale. Length 0.18. Br. wings 0.40 inch.

♂. Antennæ more than half the length of body, flattened, third and fourth joints of equal length; head coarsely pitted, no distinct sutures about ocelli; edge of nasus and mouth beneath, tegulæ, anterior angle, (the latter with a darker centre,) whitish or honey-yellow; apex of venter ferruginous; legs honey-yellow, part of coxæ and trochanters paler; basal half of coxæ, tips of hinder tibiæ and their tarsi black; basal joint of tarsi pale; inner tooth of claws hardly as large as outer and near it. Wings hyaline, costa at base pale.

Maine, Massachusetts, Connecticut, Illinois, English River, (Smiths. Inst.) Eleven ♂.

13. *Nematus sathkatchewan*, n. sp.

Black; tegulæ black; breast rufous; legs mostly yellow-red; wings hyaline. Length 0.38. Br. wings 0.76 inch.

♀. Shining black; body long; antennæ long and slender, apical joint shorter than the preceding; the ocelli, seen from before, are each in a separate basin; nasus incurved; fourth joint of palpi short, fifth and sixth longer and very slender; thorax polished; labrum piceous; a large chestnut-red spot on pectus; legs same color; the trochanters and anterior tarsi whitish; posterior tibiæ, except at their base, and their tarsi black; anterior tibial inner spur stout, blunt, pilose so as to appear bifid; inner claw tooth large. Wings hyaline, stigma black.

Lake Sathkatchewan, (Smiths. Inst.) One ♀.

14. *Nematus violaceipennis*, n. sp.

Black; orbits piceous; mouth, tegulæ, anterior angle and venter reddish-white; legs beneath piceous; wings semi-obscure, with a violaceous tinge. Length 0.32. Br. wings 0.64 inch.

♀. Black; body long and slender; antennæ about half the length of body, slightly flattened and enlarged at tip of joints, third joint not so long as fourth; lower ocellus in a heart-shaped depression; nasus angulate, emarginate; outer orbits indistinctly piceous, paler toward the cheeks; an arc-shaped spot below the antennæ, nasus, labrum and base of mandibles, anterior angle, edges of abdomen, and all but the two apical segments of venter whitish; legs black above, knees and anterior tibiæ before piceous; inner tooth of claws large and near the tip. Wings subviolaceous, nervures dark, stigma somewhat bent above.

♂. Above, the male is wholly black, nearly as long as female, slender; third joint of antennæ thicker than fourth; labrum, anterior tibiæ and tarsi indistinctly piceous. Wings slender toward tip.

Farmington, Conn., April 24. Massachusetts, (Coll. Am. Ent. Soc.) Three ♀, three ♂.

15. *N. nigrinus*.

Nematus nigrinus, Norton, Bost. Proc. viii. 1861, 159, 9, ♂.

Black; outer orbits and mouth, tegulæ, apex of abdomen and legs in part, pale. Length 0.21. Br. wings 0.48 inch.

♂. Black; body slender; antennæ two-thirds the length of body, slightly flattened and enlarged at joints, third joint shorter than fourth; nasus hardly emarginate; an outer orbital line as high as suture, edge of nasus and beneath pale piceous; tegulæ and apex of abdomen and several apical segments of vertex yellowish; trochanters, apical half of femora, tibiæ, except tips of hinder pair, and base of tarsi reddish-white, remainder black; inner tooth of claw very short, blunt and distinct from outer tooth. Wings hyaline, nervures piceous, middle of stigma and base of costa paler; second submarginal cell with one angle below, the second recurrent nervure coinciding with second dividing nervure.

Connecticut. Two ♂. This may be the male of *N. subalbatus*.

16. *N. ventralis*.

Nematus ventralis, Say, Long's Second Exp. ii. 1824, 315, ♂ ♀.

Norton, Bost. Proc. viii, 158, 5.

Black; mouth, tegulæ, anterior angle and venter pale; femora black banded; wings hyaline.

Length ♂, 0.25. Br. wings 0.54 inch.

Length ♀, 0.30. Br. wings 0.68 inch.

♀. Black; body short and stout; antennæ about half the length of body, rather stout, third and fourth joints equal length, third thicker

than fourth; sutures at sides of ocelli deep; lower ocellus in a distinctly triangular space; nasus with a shallow notch; outer and inner orbits, space about antennæ and beneath, tegulæ, anterior angle, edges of abdomen, incomplete or obsolete bands between segments and the venter pale yellow; legs of the same color; coxæ, a band covering most part of femora and the apical end of posterior tibiæ black; posterior tarsi blackish; inner tooth of claw large and near the end of claw. Wings hyaline, nervures dark, base of costa whitish.

♂. The male has the "hypostoma, palpi and mandibles at base whitish; orbits above and behind piceous; thorax dilated; triangular line before the wing and wing-scale whitish, wings slightly dusky, nervures fuscous; feet honey-yellow, posterior tarsi black-brown; tergum black, segments each with a yellow band, of which the four terminal ones are interrupted in the middle; venter pale honey-yellow."

Maine, Connecticut, New York, Pennsylvania.

A male from Connecticut agrees entirely with the description by Say, but I do not feel certain that it is the male of *N. ventralis*.

Several ♀ from Pennsylvania have shorter antennæ, and the second recurrent nervure received very near the intersection of second and third cells.

17. *N. longicornis*.

Nematus longicornis, Escholz, Entomogr. 1822, 98, 66.

"Black, with the margin of tergum fuscous, the venter and legs pale; posterior femora black; costa of wings pale, stigma brown. Head black, labrum yellowish; eyes clear gray; length $2\frac{1}{2}$ lines; antennæ longer than the moiety of body, setaceous, black; corselet black, its anterior border forming a yellowish collar; abdomen wide, flat; back brownish; lateral margins of a clear yellow; venter yellow; wings longer than the body, narrow, transparent, costa yellow, stigma and nervures brown; three discoidal cells; legs yellow; posterior femora black-brown in the middle."

Isle of Unalaska, Rus. America.

18. *N. proximatus*.

Nematus proximatus, Norton, Bost. Proc. viii, 1861, 12, ♀.

Black; outer orbits, mouth, tegulæ, apex of venter and legs, in part, reddish-yellow. Length 0.22. Br. wings 0.50 inch.

♂. Shining black; body slender; antennæ two-thirds the length of body, flattened, third joint shorter than fourth; lower ocellus in a wide, flattened basin; the whole outer orbit to suture, and a very narrow inner orbital line, base of antennæ and face below, (palpi dark,) tegulæ, upper and hinder edge of anterior angle, apex of abdomen, and

two or three apical segments of venter pale reddish-yellow; legs same color; basal half of coxæ, a slender, rather obsolete line on femora above and beneath nearly to tip, black; the posterior tarsi blackish; inner claw-tooth large, near to outer tooth; wings hyaline, stigma and costa pale.

♀. Antennæ hardly half the length of body, scarcely flattened, third and fourth joints equal, sutures distinct, more of black upon the femora at base than in the males; body slender.

Maine, Massachusetts, Connecticut. Six ♂, seven ♀. The antennæ of this species are of equal size to the fourth joint, each joint a little globose in the middle.

19. *N. pallicornis*.

Nematus pallicornis, Harris, Cat. Norton, Bost. Proc. viii, 1861, 160, 11, ♀.

Black; antennæ fuscous; body at times with a ferruginous tinge; labrum, tegulæ, anterior angle, vertex more or less pale reddish-yellow. Length 0.16—0.20. Br. wings 0.36—0.44 inch.

♀. Black; body short and rather stout; antennæ moderate, slender, third joint longer than fourth, the basal joint black, the remainder ferruginous, darkest above; lower ocellus in a large basin, nasus emarginate; orbits and spot about antennæ reddish, nasus and mouth beneath white; tegulæ, anterior angle and venter reddish-yellow, the base of coxæ black, remainder of coxæ and trochanters white, remainder of legs yellow-red, paler before; at times the hinder tarsi are fuscous, and the hinder femora and apex of tibiæ obscure; inner tooth of claws large and near the tip. Wings hyaline, stigma at base and apex and base of costa, white.

♂. The male has the antennæ paler and the whole venter yellowish.

Var. a. ♂. A triangular, dark rufous spot on the pleura. (Illinois.) Massachusetts, Maine, Illinois.

This is very much like *N. proximatus*, but differs in the form of the antennæ.

20. *N. obscurus*.

Nematus obscurus, Norton, Bost. Proc. viii, 1861, 160, 13, ♀.

Dull black; tegulæ, base of abdomen and knees indistinctly ferruginous. Length 0.25. Br. wings 0.58 inch.

♀. Black, pubescent; third joint of antennæ a little longer than fourth; clypeus crenate, labrum brownish-red, shining; mandibles rufous at tip; palpi pale; a longitudinal groove upon scutellum; basal membrane, sides of tergum, knees and front of tibiæ indistinctly ferruginous; abdomen stout; wings faintly clouded; stigma dull fuscous, costa black.

Massachusetts.

21. *N. s. pisum*.

Nematus s. pisum, Walsh, Proc. Ent. Soc. Phil. vi, 1866, 259.

Length ♀, 0.11—.14; ♂, 0.22—.26 inch. Br. wing ♀, 0.13—.17; ♂, 0.13—.14 inch.

“♀. Shining greenish-white. A quadrate spot enclosing the ocelli, and extending behind onto the disk of the occiput, but not reaching the antennæ nor the eyes, a dot above the origin of the antennæ and tips of the mandibles black. Clypeus deeply emarginate. Labrum rounded at tip. Antennæ three-fifths as long as body; joints 3—5 subequal, the scape black, the flagellum brown-black. Thorax black, with the tegulæ, and anterior angle, except its lower angle, greenish-white. Abdomen black, with the venter and the tip of dorsal segment 8, and its side-plates indistinctly pale. Cerci whitish, dark-tipped. Legs pale greenish-white, the tarsal tips, especially in the hinder legs, and the tips of their tibiæ fuscous. Wings hyaline, veins black, stigma fuscous.

♂. Differs only from female in having larger black spots upon the venter and occiput and only two edges of anterior angle pale. The antennæ are four-fifths the length of body, the scape black, the flagellum brown-black above, palpi dull green beneath, upper and hind margin of collar pale.

The gall made by it is found on *Salix discolor*. A subspherical, pea-like, hollow, pale yellowish-green gall, always growing on the under side of the leaf and almost always from one of the side-veins, in one case from the main rib, and attached to the leaf by only a minute portion of its surface, 0.18—.28 inch in diameter, and a few, immature, only .08 in diameter. Almost invariably there is but one gall to the leaf, but on four leaves there were two, and occasionally two are confluent. Surface in some smooth and even, without pubescence, in others a little shrivelled, generally studded in the medium-sized ones with four to twelve small, robustly conical nipples, which in the larger ones have burst into a scabrous brown scar. Only in three out of sixty-two was there any rosy cheek, as in *S. pomum*. The point of attachment is marked on the upper side of the leaf by a brown sub-hemispherical depression.

Larva.—August 25th, apparently eighteen-footed, no anal prolegs being visible. When at rest it elevated its entire abdomen behind the true legs in the air. Length 0.17—.23 inch; color whitish hyaline; head slightly dusky; mouth dusky; eye spots circular and black; anal segment equal in length to two of the others and apparently divided in two by a transverse medial suture. The larva goes under ground to

transform, for out of fifty galls all but three were bored, and in those, when opened, larvæ which had perished when immature were found."

Rock Island, Ill.

Two ♂, three ♀. April 27—June 9. This is apparently the same with a species from Connecticut and Illinois previously named by me *N. infimus* but the description not published.

22. *N. brunneus*.

Nematus brunneus, Norton, Proc. Ent. Soc. Phil. iv, 1864, 8, 10, ♀.

Head and thorax brown; abdomen and legs yellowish, wings hyaline. Long 0.26. Br. wings 0.62 inch.

♀. Color ochre-brown; antennæ black, about half the length of body, second joint a little longer than fourth; a sort of W-shaped depression above ocelli; lower ocellus in a flat, distinctly enclosed, obovate space, separated from the groove on ridge between antennæ, which is slender; nasus incurved, edge of labrum almost square; head and thorax dark ochre brown; mouth, tegulæ, anterior angle, basal plates, abdomen and most part of legs yellowish; tips of posterior tibiæ and their tarsi fuscous; wings faintly smoky; stigma and costa pale; second submarginal with two angles beneath.

Rocky Mountains, Colorado, (Coll. Am. Ent. Soc.) One specimen.

23. *Nematus rufo-fasciatus*, n. sp.

Black; a band on middle of abdomen and most part of legs rufous; wings smoky-hyaline. Length 0.34. Br. wings 0.70 inch.

♀. Black; body long and moderately stout; antennæ about two-thirds the length of body, slender, cylindrical, third joint but little longer than fourth; head dull, with coarse, confluent punctures; nasus coarsely punctured, deeply channelled across the middle, angulate, emarginate; edge of labrum incurved; outer orbit and a spot opposite ocelli on each side, labrum and palpi rufous; upper half of anterior angle and basin on each side of scutellum rufous; abdomen, except the basal plates and three apical segments, chestnut-red; legs the same color; coxæ, except at tip, black; anterior inner tibial spur stout, apparently bifid; inner claw tooth large. Wings smoky-hyaline, nervures piceous, stigma and costa pale.

Mackenzie River, Hudson's Bay Territory, (R. Kennicott).

24. *N. erythrogaster*.

Nematus erythrogaster, Norton, Proc. Ent. Soc. Phil. iii, 1864, 8, 12, ♀.

Black; the collar and abdomen, except at base, rufous; wings hyaline. Length 0.28. Br. wings 0.60 inch.

♀. Body moderately stout; antennæ more than half the length of body, slender, joints not enlarged at tips, third longer than fourth; head rugose, with a trilobate basin, enclosing ocelli; nasus moderately

incurved; labrum piceous; tegulæ, anterior angle and the abdomen, except the two basal segments, rufous; legs varied; the coxæ, trochanters, intermediate tibiæ and tarsi, and a band at base of the hinder tibiæ white; the four hinder femora and apex of intermediate tibiæ rufous; apex of hinder femora and apical two-thirds of their tibiæ and the tarsi black. Wings perfectly clear, stigma fuscous, costa pale.

Massachusetts, (Coll. Am. Ent. Soc.) One ♀.

25. *N. luteo-tergum*.

Nematus luteo-tergum, Norton, Bost. Proc. viii, 1861, 161, 14, ♂.

Black; mouth whitish, an orbital line, the abdomen and anterior legs rufous, wings subviolaceous.

Length ♂, 0.24. Br. wings 0.50 inch.

Length ♀, 0.32. Br. wings 0.66 inch.

♀. Body long and not very stout; antennæ about half the length of body, flattened, third joint shorter than fourth; lower ocellus in a basin; head dull, with coarse, confluent punctures; nasus wide and distinctly notched; mandibles with a strong inner tooth; an axe-shaped spot beneath the antennæ; nasus, labrum, base of mandibles and the anterior angle whitish, (the latter with a black, round central spot); orbits without and a separate spot opposite ocelli within, reddish; tegulæ dark; basal membrane and abdomen chestnut-red, at the basal segment blackish; legs black; the two anterior pair in front, below the middle of femora and the base of posterior coxæ varying from reddish-white to piceous; inner anterior tarsal spur bifid; inner tooth of claws large; wings with a violaceous tinge; nervures piceous.

♂. The antennæ of male are longer, the axe-shaped spot below antennæ, most of the outer orbital mark, and the pale anterior angle are wanting and the legs are more varied with piceous; wings almost hyaline.

Maine; Connecticut. Two ♀, two ♂.

26. *N. fur*.

Nematus fur, Walsh, Proc. Ent. Soc. Phil. vi, 1866, 263, ♂.

Length ♂, 0.39 inch. Br. wing, ♂, 0.38 inch.

"♂. Black; head opaque, very minutely and closely punctate, rugose. Clypeus, labrum, the extreme tip of the cheek and the base of the mandibles all dull greenish-white. Clypeus emarginate in a circular arc of about 45°, with a small tubercle in the middle of its anterior margin. Labrum full as long as wide, its tip rounded. Antennæ black, four-fifths as long as body, rather more compressed than is usual in ♂, fourth and fifth joints equal in length, third shorter by one-fourth. Thorax opaque, very minutely rugose, subpolished on the pectus; a pale subtriangular tubercle on the lateral margin of the black,

subpolished, basal plate. Abdomen subpolished, bright fulvo-rufous, the basal edge of joint one, next the basal membrane, which is whitish, clouded with black. Genitals obfuscated. Legs black. Wings subhyaline, slightly tinged with fuliginous, veins and stigma black.

Rock Island, Ill.

One ♂ bred March 29, from an old subpeduncled spherical gall of *Cecidomyia s. batialis*, Walsh, on *S. humilis*. ♀ unknown. As the mother Sawfly must have deposited her egg in this gall after the gall-maker had quit it, or not long before, it is a question if this species can be considered an Inquiline."

There is very little doubt but this is the same with *N. luteo-tergum* ♂, which only differs in having the legs in part piceous and in being somewhat smaller.

27. *Nematus Hudsonicus*, n. sp.

Black; orbits, mouth, tegulæ, anterior angle, venter and legs, except a black line on two posterior pair, white. Length 0.38. Br. wings 0.76 inch.

♀. Antennæ less than half as long as body, joints cylindrical, somewhat enlarged at tip, third and fourth of equal length; sutures at sides of ocelli deep; ocelli in a triangular basin; nasus very slightly emarginate; orbits, space about antennæ and mouth beneath, tegulæ, anterior angle (a black line in middle) and the venter whitish; the latter with a row of black spots on each side forming an interrupted black line; scutel large, produced behind to a slightly raised angle; legs dull white, with the basal upper half of anterior femora, a line down the upper side of posterior femora and tibiæ and their tarsi black; anterior inner spur of tibiæ blunt, bifid, inner tooth of claw large. Wings hyaline, stigma and costa brown, emargination of stigma distinct.

Fort Good Hope, Mackenzie River, Hudson's Bay Territory, (R. Kennicott.) One ♀.

28. *Nematus sumptus*, n. sp.

Black; mouth, orbits and tegulæ white, basal half of abdomen, spot on pleura and most part of legs rufous. Length 0.28. Br. wings 0.62 inch.

♂. Body long; head large; mouth below antennæ, the outer orbits extending over the back of head and a narrow inner orbital line interrupted opposite ocelli yellow; nasus emarginate; tegulæ and anterior angle whitish; abdomen chestnut-red, the two apical segments blackish; an indistinct, piceous, perpendicular spot on pleura near breast; coxæ and trochanters whitish, remainder of legs rufous, paler before, except the posterior tibiæ and tarsi, which are blackish; hinder tibiæ somewhat swelled; inner tooth of claws very obtuse, hardly visible. Wings hyaline, faintly smoky, stigma dark brown.

Maine, (A. S. Packard.) One ♂.

29. *Nematus pleuricus*, n. sp.

Black; orbits, mouth, pleura, venter and legs whitish. Length 0.36. Br. wings 0.72 inch.

♀. Antennæ about half the length of body, fuscous beneath, joints cylindrical, slightly enlarged at tips, third and fourth joints equal; sutures deep, lower ocellus in a circular depression; nasus hardly incurved; a wide orbital line (interrupted opposite ocelli), space between and all beneath antennæ, tegulæ, anterior angle, (with a black spot in middle), breast before anterior coxæ, pleura, (lower edge straight and sharply defined), a spot on each side of scutel, and a narrow line on sinus between scutel and wings, forming an interrupted band from wing to wing, reddish-yellow; apex of abdomen and venter the same color, the latter blackish toward base; legs of same color, basal half of coxæ and base of femora black; posterior tibiæ at tip and the tarsi fuscous; inner tooth of claw obtuse, distinct from tip; wings hyaline, stigma and costa white, an emargination at base of stigma.

Fort Resolution, Great Slave Lake, (R. Kennicott, Smiths. Inst.)

One ♀.

30. *N. ventricosus*.*

Nematus (tentredo) ventricosus, Klug, Berl. Mag. 1819.

Bouché, Nat. Ins. 1834, 140. Larva on currant and gooseberry.

Hartig, Aderf. Deutsch. 1837, 196.

Nematus (tentredo) affinis, Lepel, ♂, Mon. Tenth. 1823, 69.

Nematus (tentredo) 3-maculatus, Lepel, ♀, Mon. Tenth. 1823, 69.

Nematus (tentredo) grossulariæ, Dahlb., 1835. Gooseberry.

Nematus (tentredo) grossulariatus, Dahlb., 1835. Gooseberry.

Nematus ribesii, Stephens, Ill. Brit. Ins. Mand. vii, 1835, p. 32. Red currant.

Nematus ribis, Leduc., Mein. Soc. Sc. Natur. Seine et Oise ii, 1846. White and red currants.

* Having been absent from the time Mr. Walsh published his description until now, and having no perfect American specimens in my collection, and no time to examine authorities, I give Mr. Walsh's descriptions and conclusions as fully as the space will allow.

Several specimens, injured on the way, from Prof. Winchell, agree in the main, but I note several points. In the ♀ there is a rufous spot above the eye, prolonged down the inner orbit. The antennæ have little if any rufous color, the third joint longest, and a wide semi-obscure band across most of the segment of tergum. In the male the spots above the eyes are very obscure and the thorax wholly black, except the tegulæ and anterior angle, shaded into very obscure ferruginous, where it is palest in the ♀. The inner claw tooth is large and near the tip.

There is very little doubt that this is a European importation which has thriven, as is not uncommon, even more in this country than at home, in wide sections destroying the currant and gooseberry bushes so as to render them useless.

Nematus (selandria) ribis, Winchell, Am. Jour. Sc. and Arts, 1864, 291. Red currant.

Nematus ventricosus, Walsh, Prac. Ent. I, 1866, 124.

Length ♀, 0.22—.28; ♂, 0.20—.22. Br. wings, ♀, 0.53—.64; ♂, .44—.51 inch.

“♀. Bright honey-yellow. Head black; parts between and below the origin of the antennæ, except tip of mandibles, dull honey-yellow. Antennæ brown-black, often tinged with rufous above toward apex and dull rufous beneath, except the two basal joints, four-fifths as long as body, third joint, viewed laterally, four times as long as wide, joints 3—5 equal in length. In two females the antennæ are ten-jointed, the tenth slender and as long as ninth. Thorax, with the anterior lobe above, a wide stripe on the disk of each lateral lobe, which is rarely reduced to a mere dot on the whole of each lateral lobe, a spot at the base and tip of scutel, the two sometimes confluent or subobsolete, a small spot at the outer end of each cenchrus and a transverse geminate spot between them, the tip of metathoracic scutel, the front and hind edge of basal plates or rarely its whole surface above, the whole surface of the breast between the front and middle legs, or rarely two large spots arranged crossways on that surface, all black. Abdomen, with segments one and two, rarely edged at tip with black. Sheath of ovipositor tipped more or less with black, the surrounding parts sometimes more or less tinged with dusky. Legs bright honey-yellow; all the coxæ and trochanters whitish; the extreme tip of the hind shanks and the whole of the hind tarsi brown-black. Wings glassy, veins and stigma brown-black, the latter as well as the costa marked with dull honey-yellow. In one female the three submarginal cross-veins in one wing are wanting and the first only is present in the other. In others several of these are absent.

♂. Differs from ♀ in having the antennæ with not so much of rufous, as long as the body, vertically more dilated. Thorax (black,) with the wing-scales and entire collare honey-yellow. Abdomen with more or less of its sides, the extreme tip above and its entire inner surface honey-yellow. In two ♂ the middle submarginal cross-vein is wanting, so that they might be mistaken for *Euura*.”

Western New York; Michigan.

Described from twenty-two ♂ and thirteen ♀, by Mr. Walsh. He describes the larva as follows: The eggs are laid on the ribs of the under side of the leaf, and the larvæ when hatched begin by eating little circular holes directly through the leaf. “Length $\frac{3}{4}$ inch. Pale green, verging on yellow toward the tail. Head black, polished, with numerous short hairs proceeding from minute tubercles. Mouth, except the

mandibles, pale green. Joints of the body above with rows of small, shining black tubercles placed crossways, in the mature specimens having no hairs, except in the larger tubercles on the sides. First joint behind the head with a single row of dorsal tubercles; joints two and three each with a double row; joints 4—12 with a treble row; the anal plate black, polished, and prolonged at each posterior angle in a slender, acute thorn, and hairy, beside the triple row of tubercles before it, a group of six or eight on each side and directly before it. A longitudinal row of larger lateral black tubercles on joints 2—12, one on each joint, beneath which is a geminate black tubercle above each proleg, all of these bearing many hairs. Legs black, the sutures pale green. Prolegs fourteen, pale green, all but the two anal ones with a few minute black dots toward their tip in front. Joints 4—11 without prolegs."

Prof. Winchell describes the larvæ and its habits as follows:

The larvæ feed on the leaf of the red currant. They are twenty-footed, (six pectoral, twelve abdominal and two caudal). First seen by him May 23d. "The full-grown larva is three-fourths of an inch in length, color pale green; head, tail and feet black, with numerous black spots regularly arranged around the body, from the summit of each of which proceeds one, two or more short stiff hairs." They begin upon the leaves near the ground, eating all the tissue of the leaf, and working upward destroy all the leaves. They passed into the ground and all disappeared about the 23d of June. On the 16th of June a swarm was seen under the currant bushes, mostly males, generally sluggish, but at intervals excited, especially when a female appeared. The female proceeded at once to deposit her eggs, which were cylindrical, whitish and transparent, in regular rows along the underside of the nerves of the leaves, at the rate of about one in 45 seconds. The embryo escaped from the egg in *four days*. When it first escaped it was one-tenth of an inch long. It became one-third longer in twenty-four hours. It attained its full growth by June 25th. It then moulted and descended into the ground.

Summary.—"First brood May 17th. First larvæ May 21st. Moulting and burrowing June 3d.

Second brood June 18th. Second larvæ June 25th. Moulting and burrowing June 28th.

Incubation of ovum three or four days; feeding, moulting and burrowing eight days. Time in ground of first brood 13 days, life of fly 9 days."

Prof. Winchell thinks that the larva changed its skin but once.

These insects appear in great numbers, and for several years have almost destroyed the crop of currants in parts of New York and Michigan.

31. *Nematus lateralis*, n. sp.

Black; orbits, face below antennæ, pleura, body beneath, (except breast,) and legs, pale. Length 0.38. Br. wings 0.76 inch.

♀. Antennæ half the length of body, joints cylindrical, 3d and 4th equal, slightly enlarged at tips; suture at sides of ocelli deep, lower ocellus in a shallow circular space which has a distinct ridge around its upper half; nasus produced, distinctly emarginate in middle and at sides; tongue and palpi dark, last joint of maxillary palpi shorter than the preceding; the whole orbits as far as sutures, two spots behind ocelli, a spot above antennæ, space around and face below, reddish-white; sutures of metathorax and a bent line between upper wings crossing upper half of scutellum, rufous; tegulæ, anterior angle, pleura and body beneath, except a black spot on breast, reddish-white; legs the same color; tarsi fuscous, a slender black line on the upper and lower side of femora and less distinctly on the posterior tibiæ; anterior inner tibial spur bifid, inner claw tooth large and near the tip; wings hyaline, nervures black, stigma pale, with little or no emargination above; second recurrent nervure received at a distance from the intersection of second and third cells.

Var. Abdomen almost entirely pale.

Three ♀. Brunswick, Me., (A. S. Packard.) Albany, N. Y., (Dr. Peck).

32. *N. desmodioides*.

Nematus desmodioides, Walsh, Proc. Ent. Soc. Phil., vi, 1866, 257, ♀ ♂.

Length ♀, 0.15—.19, ♂, 0.11—.13. Br. wing ♀, 0.17—0.20, ♂, 0.17.

“♀. Shining greenish-white. A quadrate spot enclosing ocelli nearly reaching to antennæ, never touching the eyes, and tips of mandibles, black. Clypeus emarginate in an arc of about 90°. Labrum rounded at tip. Occiput with a more or less dark black cloud on its upper disk confluent with ocellar spot, and generally concealing the sutural black lines. Antennæ one-half as long as body, joints 3—5 subequal, 9 sometimes as long as 8, the scape black, flagellum brown-black. Thorax black, with the tegulæ, anterior angle, except a lateral black spot, a pair of transverse spots on the scutellum and sometimes contiguous, and a large, obscurely defined, triangular spot on the pleura, greenish-white. Rarely (2 ♀ out of 8 ♀) the mesonotum is dull rufous, with a broad black vitta reaching from the collar to the scutellum, and

the extreme tip of scutel black, as in many *S. pomum* ♀. Abdomen, except generally the extreme tip, black above, in lateral plates black toward the base of the abdomen, greenish-white toward its tip. Cerci usually greenish-white. Ovipositor greenish-white, sheaths black. Venter always immaculate, tinged more or less with honey-yellow. Legs greenish-white, the hinder pair tinged with honey-yellow; tips of hinder tibiæ and of all the tarsi more or less dusky. Wings hyaline, veins black; costa and stigma pale dusky; basal half of stigma greenish-white. In one wing of one ♀ and also of one ♂ the third sub-marginal cell is wanting.

♂. Differs from ♀ in having the ocellar spot and that on the occiput larger, the first sometimes touching the eyes. Antennæ two-thirds as long as body. Thorax black, except the tegulæ and two edges of anterior angle, and the venter greenish-white, lateral plates black, their terminal joints obscure. The legs not tinged with yellow.

The gall is found on *S. humilis*. It is smooth, flattish, fleshy, sessile, yellowish-green, monothalamous, semicircular, in general shape like the seed of a *Desmodium* or the quarter of an orange. It is about equally divided between the two surfaces of the leaf; no rosy cheeks. Generally there is but one gall on a leaf; one leaf was seen with three upon it. Length 0.23—.50 inch. 131 specimens. Gall mature July 30th.

Larva. Three or four of these July 30th, did not apparently differ from those of *S. pomum* examined the same day. When the larva quits feeding in the gall there remains nothing of it but a shell as thin as paper. All the imagos bred pupized inside the gall, but there was no earth within the breeding-vase.

Two ♂, eight ♀, bred April 2—15. At times this is much like *S. pomum*, but differs in having the breast black. It is very much like *N. lateralis*, Norton, but is much smaller and has the femora of one color.

33. *N. fulvipes*.

Nematus fulvipes, Harris' Cat.

Norton, Bost. Proc. viii, 1861, 159, 10, ♂.

Black; orbits, mouth, tegulæ, anterior angle, pleura, venter and most of legs yellow-red. Length 0.22. Br. wings 0.44 inch.

♂ ♀. Body slender. Antennæ moderate, very slender; head roughened above; nasus deeply emarginate; the orbits, interrupted opposite ocelli, face below antennæ, tegulæ, anterior angle, pleura (pleura with a waxy appearance), apex of abdomen, and venter yellow-red, breast black; legs fulvous, paler before; trochanters white; posterior tarsi

black; inner tooth of claw large and near to tip. Wings hyaline, stigma and costa pale.

Mass., Conn., Labr. Two ♂, one ♀.

34. *N. crassus*.

Nematus crassus, Escholz., Entomog. 1822, 97, 65.

"Black; sides of the head, lines on the thorax, scutellum and pleura, chestnut; tibiæ pale. Length 4 lines.

Body thick. Head black in the middle, of a nut-brown on the sides; parts of the mouth yellow. Antennæ longer than the moiety of the body, filiform, black; border of the corselet brown; two longitudinal lines on the thorax, scutel and the greater part of the sides of the thorax of a chestnut-brown; abdomen convex, shining black; wings longer than the body, wide, transparent, stigma and costa yellow, nervures brown; marginal cell simple, extending almost to the tip; three discoidal cells; legs yellow; a long black spot under the anterior femora; posterior femora black, at the extremity yellow.

Isle of Unalaschka, Russ. Am." Not seen.

35. *Nematus placentus*, n. sp.

Black; thorax trilineate with black; most part of head, prothorax, sutures of metathorax, scutel, pleura, a spot on breast, edges of tergum and venter yellow-white. Length 0.28. Br. wings 0.68 inch.

♀. Body stout. Antennæ moderate, slender, final joint very slender; head pale; a spot about ocelli, two longitudinal oval spots below and back of head black; tegulæ and prothorax, metathorax, (with three black vittæ on the lobes), scutel, sides and apex of tergum, venter, pleura varying from ochraceous to whitish, and pectus black, with a large pale spot in its centre; coxæ, trochanters, the four anterior legs, except a black line on the upper side of femora, ochraceous; posterior legs black, with both ends of femora and the basal half of tibiæ beneath pale. Wings hyaline, stigma pale in middle.

♂. The male differs in having the legs entirely pale below the coxæ.

Var. ♂. The mesothorax wholly black. (Canada.)

Labrador, (A. S. Packard,) Canada. One ♀, two ♂.

This seems allied to *N. lateralis*.

36. *N. inquilinus*.

Nematus inquilinus, Walsh, Proc. Ent. Soc. Phil. vi, 1866, 260, ♀ ♂.

Length ♀ 0.22—0.26, ♂ 0.20 inch. Br. wing ♀ 0.24—0.27, ♂ 0.42 inch.

"♀. Shining honey-yellow. A quadrate spot enclosing the ocelli, not reaching antennæ nor touching orbit, and the tips of mandibles black. Clypeus emarginate in an arc of about 120°. Labrum promi-

nent and rounded at tip. Occiput generally with a discoidal black cloud. Antennæ full one-half as long as body, the scape black, flagellum brown-black. A broad vitta on the anterior two-thirds of the anterior mesothoracic lobe, sometimes reaching to the scutel, the whole of the lateral lobes or sometimes only the interior third of each, the extreme base and tip of scutel, sometimes connected by a black line, the entire pectus and part of the pleura, so as to leave above a large, triangular, honey-yellow spot of variable size, and a cloud on lower corner of anterior angle, black. Metathorax black, the basal plates occasionally with a discoidal honey-yellow cloud on each side. Tergum black, sometimes on all but the last segment, sometimes on one or two or three basal segments, with several of the following sutures dusky; venter and side plates honey-yellow, also the cerci, with dusky tips. Ovipositor greenish-white, its sheaths black. Legs greenish-white, the hinder pair sometimes pale honey-yellow, the tips of hinder tibiæ and all the tips of tarsi dusky. Wings hyaline, veins black; costa and stigma pale dusky, sometimes the costa and basal half of stigma dull greenish-white.

♂. Differs from ♀ only in having the ocellar spot much larger and the disk of the occiput black, the antennæ two-thirds as long as the body, the meso- and metathorax entirely black, lateral plates basally black, the whole of the hind tarsi dusky, the costa and stigma black.

Rock Island, Ill.

One ♂, three ♀. April 17—18 from the Cecidomyioid galls *S. rhodoides*, Walsh. It is much like the pale variety of *Nematus s. desmodioides*, Walsh. It may be the same with *N. placentus*, n. sp., which is, however, larger and with different shades of color. In a specimen received from Mr. Walsh I find a central pale spot in middle of pectus, which is not noted by him in his description.

37. *N. longicornis*.*

Nematus longicornis, Say, Bost. Jour. i, 1835, 219, 3.

Norton, Proc. Bost. Soc. viii, 158, 4, ♀.

Black; orbits, face below antennæ, tegulæ, anterior angle, pleura, (except a black spot,) the whole body beneath and legs whitish. Length 0.26. Br. wings 0.54 inch.

♀. Body rather long. Antennæ black, more than two-thirds the length of body, slender, third and fourth joints equal; head rather smooth, sutures at sides of ocelli distinct; lower ocellus in a basin, which is smooth and shining, obovate, with distinct edges; nasus angulate emarginate; labrum emarginate; a spot on vertex, from anten-

* Escholtz named a *Nematus longicornis* in 1822.

næ to summit, and the back of head black; remainder pale; a slender ridge runs through the groove on anterior lobe of thorax; the tegulæ, anterior angle, pleura and whole body beneath whitish, except two black spots on pleura, the anterior one large and lunulate; scutel black, sutures of abdomen indistinctly pale; legs pale, with the apical half of hinder femora and tibiæ and their tarsi blackish; inner tooth of claws large and near the tip; wings hyaline, stigma full, nervures and stigma piceous, base of stigma and costa pale.

♂. Antennæ fulvous beneath, third joint shorter than fourth, curved at base; a straight black line under the anterior wings, tips of posterior tibiæ blackish, their femora pale, stigma color of costa.

Ia., (Say,) Conn., New York, Penn. Great Slave Lake, Hudson's Bay Territory.

38. *Nematus trilineatus*, n. sp.

Testaceous; spot on vertex, three vittæ on thorax, spot on pleura, bands on tergum, hinder tibiæ and tarsi black. Length 0.26. Br. wings 0.56 inch.

♀. Resembles *N. longulicornis*. Body long and not very stout. Antennæ long and slender; head testaceous, with a black spot about ocelli and the enclosed square behind it; back of head pale. Body testaceous; scutel pale, its hinder third black; three vittæ on mesothorax; part of metathorax, basal plates, a band covering most of each segment of tergum, and a small spot on pleura below the anterior wings black; a large, clear waxen spot covering pleura; breast testaceous; venter almost white; coxæ, trochanters and base of femora white, the tarsi of four anterior legs above, the hinder tibiæ and tarsi wholly black; remainder of legs testaceous; inner claw tooth large and near the tip. Wings hyaline, stigma testaceous, costa and nervures blackish.

Canada, (Coll. Am. Ent. Soc.) Newburgh, N. Y., (W. H. Edwards). Three ♀.

39. *N. vertebratus*.

Nematus vertebratus, Say, Bost. Jour. i, 1835, 218, ♀.

Norton, Bost. Proc. viii, 158, 1.

"Green; antennæ and spots above blackish. Length one-quarter of an inch.

♀. Body pale green; vertex with a black spot; antennæ black, fuscous toward the tip; second and third joints subequal; nasus white, somewhat bilobate; labrum not very obtusely rounded before, a little indented on the disk, white; mandibles piceous at the tip; thorax trilineate with black, scutel black; wings hyaline, nervures blackish, costal nervure and carpus pale greenish; tergum with a vitta of blackish spots, almost obsolete toward the tip, tarsi dusky."

Indiana.

A specimen from Connecticut has the antennæ hardly half the length of body; distinctly fuscous beneath; the spots on the thorax covering most of the lobes, scutel black; legs entirely of one color, tarsi fuscous; inner tooth of claw large and near the tip; wings perfectly clear, costal edge hardly, if at all emarginate. It is smaller than *N. integer*, from which it does not differ much. An individual from Pennsylvania has but little black upon the vertex, the vittæ on the mesothorax small and but one or two on the abdomen, the basal half only of scutel black; costa bright green, but three submarginal cells, the second cross nervure being incomplete.

40. *N. integer*.

Nematus integer, Say, Bost. Jour. i, 1835, 219, 2, ♀.

Norton, Bost. Proc. viii, 158, 2.

Green or reddish-yellow; three vittæ on thorax; the tergum, posterior tibiæ and tarsi black. Length 0.27. Br. wings 0.56 inch.

♀. Greenish-yellow; body rather short and stout; antennæ black, a little more than half the length of body, slender, third and fourth joints of equal length, sutures about ocelli distinct; lower ocellus in an obovate basin, edges sharply defined, ridged above; nasus hardly emarginate; head whitish behind; a spot on vertex, three vittæ on the lobes of thorax, an oblique spot behind scutel, covering metathorax and basal plates, and most of the tergum black; scutel pale; edges of tergum and some of the sutures between its segments whitish; posterior tibiæ and tarsi black; inner tooth of claws large and near to tip. Wings hyaline, stigma and costa dull waxen.

Var. a. ♀. Spot on vertex varying in size; the lower half of scutel is black; only the tip of posterior tibiæ is black; the abdomen is somewhat flattened; the emargination at stigma is more distinct in some than in others.

Maine, Mass., Conn., N. Y., Penna. Indiana, (Say).

Say remarks that this has "no obvious emargination in the costal edge," but all the specimens examined have this place more or less emarginate. They also present variations in the extent of black upon the tergum. A specimen from New York is reddish-yellow rather than greenish in color. The black vertical spot extends back over the occiput.

41. *N. s. pomum*.

Nematus s. pomum, Walsh, Proc. Ent. Soc. Phil. vi, 1866, 255.

Length ♀ 0.12—22 inch, ♂ 0.17—20 inch. Br. wing ♀ 0.14—25, ♂ 0.18—20 inch.

"♀. Shining honey-yellow. Head: a quadrate spot about ocelli of variable size, but separated from the eyes, and the tips of the mandi-

bles, black. Clypeus emarginate in an arc of about 90° . Labrum rounded at tip. The sutures of occiput back of ocelli black, the elevated trapezoidal space rarely occupied by a black cloud. Antennæ one-half as long as the body, joints 3—5 subequal, 9th generally as long as 8th, the scape black, the flagellum brown-black, its terminal half often tinged beneath with rufous. Mesothorax always with an obscure subquadrate spot at the intersection of its sutures, and a more definite longer one on the anterior half of the anterior lobe, the two often confluent; the tip of scutel sometimes and always the entire metathorax, including the basal plates, black, very rarely the entire mesothorax is black. Pectus immaculate, except in one dark ♀, is slightly obfuscated. Tergum, with sometimes the basal edge of first segment only, black, and all the sutures toward the base dusky; usually with more or less of its basal half black, rarely with the whole or nearly its whole surface black or blackish; venter always immaculate, lateral plates very rarely (♀) basally black. Ovipositor honey-yellow, its sheaths black. Legs honey-yellow; coxæ and trochanters of the two anterior pair more or less whitish, tips of all six tarsi lightly obfuscated and sometimes the extreme tips of hinder tibiæ. Wings hyaline, veins black, costa honey-yellow, base of stigma honey-yellow. Third submarginal cell usually longer than wide, sometimes equal, very rarely or only in a single wing three or four times wider than long or obsolete.

♂. Differs from ♀ only as follows: The quadrate spot on vertex is larger and often more or less confluent with the eyes, and never separated but by a capillary orbit. The occiput, except a narrow orbit, black. Antennæ two-thirds as long as body, almost invariably dull rufous above, or bright rufous or pale green beneath, except toward the base, very rarely as in ♀. The entire thorax black, except the tegulæ and two edges of anterior angle. Tergum black, sometimes 1, or 1 and 5, or two or three terminal segments slightly tipped with yellow; lateral plates clouded, especially towards base, venter immaculate. Costa scarcely pale, only extreme base of stigma whitish.

Twenty-six ♂ and forty-six ♀ bred April 16—25. The gall *S. pomum* found on *Salix cordata* and very rarely on *S. discolor*. A smooth, fleshy, sessile, globular or slightly oval monothalamous gall, like a miniature apple, 0.30—.55 inch diameter, growing on one side of the midrib of a leaf, and extending to its edge or beyond it. The principal part of the gall projects from the under side of the leaf; very rarely it is bisected by the leaf. Color greenish-yellow, sometimes with a rosy cheek, especially the upper surface, and often with little

dots. Fully mature July 31st. An analogous gall is formed in Europe on various willows by *Nematus gallicola*, Westw.

Larva. May 24th it is only about 0.10 long. June 11 it is white, 0.10—.13 long. July 24 0.15 long. July 30 0.15—.20 long, pale greenish-white; head pale brown. Legs freely moveable. There was no earth in the jar in which the galls were placed, and most of the cocoons were spun in the galls and a few between them."

Sept. 9th Mr. Walsh noticed three larvæ creeping about in the jar, 0.35—.40 in length, pale cinereous, with pale dusky markings, which he thought belonged to the Inquilinous genus *N. mendicus*, one of which was bred in the spring from the same lot of galls.

Rock Island, Ill.

42. *N. hospes*.

Nematus hospes, Walsh, Proc. Ent. Soc. Phil. vi, 1866, 261, ♀ ♂.

"Absolutely indistinguishable from the normal type of the gall-making *N. s. pomum* ♂ ♀, except that in ♂ the lateral plates of the abdomen are blacker and, as in some ♂ *S. pomum*, the first dorsal segment in ♂ is lightly tipped with yellow. Length ♀ 0.18—.19, ♂ 0.17 inch. Br. wings ♀ 0.40—.42, ♂ 0.36 inch."

Rock Island, Ill.

One ♂, two ♀ bred from Cecidomyidous gall *S. strobiloides*, O. S., April 7—8, and consequently they appear to be inquilinous.

43. *Nematus trivittatus*, n. sp.

Color greenish-white; a spot on vertex, and three vittæ on thorax black; antennæ long and slender. Length 0.28. Br. wings 0.62 inch.

♀. Body stout; antennæ black above, pale beneath, nearly as long as body, slender, cylindrical, slightly enlarged at tips, third and fourth joints equal; head as in *N. integer*; nasus with a wide emargination; a spot on vertex, and three vittæ on the lobes of mesothorax black; a deep groove on anterior lobe; scutel and abdomen pale greenish (sometimes reddish-yellow); legs pale, apical joints of tarsi fuscous; inner claw tooth large and near the tip. Wings perfectly hyaline, stigma, costa and nervures of apical half greenish or brownish, of basal half blackish.

Mackenzie River and Great Slave Lake, Hudson's Bay Territory, (Kennicott, Smiths. Inst.) Illinois, (Coll. Am. Ent. Soc.).

Three specimens. One from Fort Resolution, Great Slave Lake, has the antennæ a little shorter and two or three small black spots at the base of the abdomen.

44. *N. bivittatus*.

Nematus bivittatus, Norton, Bost. Proc. viii, 158, 3, ♀.

Orange-yellow; head, two vittæ on mesothorax, base of scutel, metathorax, a spot on breast, and spots on abdomen, black. Length 0.18—0.22. Br. wings 0.45 inch.

♀. Body stout; antennæ black, more than half the length of body, third, fourth and fifth joints equal, rather stout; head above antennæ entirely black, rugose below summit, sutures indistinct; lower ocellus in a kind of depression, from which (generally) radiates three channels downward; nasus not emarginate; clypeus notched before; a space between antennæ and the mouth beneath whitish; two vittæ on the side lobes of mesothorax, basal half of scutel, metathorax and basal plates, a spot on pectus, sides of second segment, and a spot in middle of most of the following segments of tergum black; pleura waxen above, its lower third and most of the pectus deep orange; legs the color of body, with the trochanters whitish, tips of posterior tibiæ and their tarsi black; inner claw tooth large and near tip; wings hyaline; stigma and costa blackish, the latter paler at base; first submarginal cross line sometimes obsolete.

Mass., Conn. Four ♀.

45. *Nematus aureopectus*, n. sp.

Ochraceous; antennæ, two vittæ on mesothorax, the metathorax and tergum black. Length 0.34. Br. wings 0.64 inch.

♀. Short and stout; antennæ black, over half the length of body, third and fourth joints equal; head smooth above, face below ocelli rugose, sutures obsolete; nasus wide, with a moderate semicircular notch; head pale, with a small dusky or blackish spot about ocelli; two vittæ on side lobes of mesothorax, with an indistinct line down the groove of forward lobe; lower half of scutel, metathorax and tergum black; edges of tergum color of body; upper part of pleura waxen, its lower third and pectus orange colored and pilose; legs color of body, the base of posterior coxæ, tips of their tibiæ and tarsi blackish-brown; inner claw tooth obtuse and removed from the tip; wings hyaline, stigma and costa pale; second submarginal cell with one angle beneath, the second recurrent nervure coinciding with intersection of second and third cells.

Mass., (S. H. Scudder); New York, (J. Akhurst); Penn., (Smiths. Inst.)

The head is wider and the body stouter than in the preceding species, and the inner spur of anterior tibiæ is apparently bifid.

46. *N. mendicus*.

Nematus mendicus, Walsh, Proc. Ent. Soc. Phil. vi, 1866, 261, ♀ ♂.

Length ♀ 0.22—.24, ♂ 0.18 inch. Br. wing ♀ 0.23—.25, ♂ 0.19 inch.

"♀. Pale grass-green. Head rufous around the ocelli, sometimes tinged with rufous throughout. Eyes, ocelli, a dot behind, and generally one at each end of a transverse carina half way between the anterior ocellus and the antennæ, sometimes a dot outside of each antennæ and always the tips of the mandibles, black. Clypeus emarginate in a circular arc of 90°—120°. Antennæ slender, as long as body; joints 3—5 subequal, 4th sometimes a trifle longer than either; the scape black, with joint 2 sometimes pale rufous below, the flagellum brown-black, generally dull rufous or reddish-brown above, except toward the base, and always bright rufous beneath, except at extreme base. Thorax tinged with rufous, especially above; a coarse longitudinal line on the disk of each lateral lobe, sometimes with a dot inside its posterior end, and sometimes a slenderer longitudinal line on the front of the anterior lobe, a band near the tip of the scutel, a pair of transverse dots in the hollow behind it, an abbreviated band on the succeeding carina, generally in the hollow between the carina and the basal plate an abbreviated transverse line, and sometimes the edges of the basal plate bordering the basal membrane, all black. Abdomen sometimes tinged with rufous; segment 1 sometimes with the edge bordering the basal membrane and an obscure dot on its dorsal tip black. Ovipositor sheaths tipped with fuscous. Legs greenish-white; tip of hinder tibiæ and all the tarsi more or less fuscous. Wings hyaline, veins black; costa and stigma pale green.

♂. Differs from the normal ♀ only as follows: The body is slenderer in proportion than usual, general color whitish. A quadrate black spot encloses the ocelli, includes the dot on the occiput and the two behind the antennæ. The antennæ are one-fourth longer than body, the scape black, the first joint basally green, the flagellum rufous above, bright rufous beneath. The entire meso- and metathorax is black. On the tergum the basal $\frac{1}{2}$ — $\frac{1}{3}$ of segments 1—6, nearly the whole of 7, and a dorsal line on 8 are all superiorly black; lateral plates all whitish; basal membrane whitish."

Rock Island, Ill.

One ♀, three ♂, Inquilinous. "One ♀ bred from the Tenthredinoid gall *S. pomum* of the preceding year's growth, May 2d. Another ♀ from the Cecidomyidous gall *S. brassicoides*, Walsh, August 5th, of the same year's growth. In this the transverse carina behind

the antennæ is straight or nearly straight, while in *vertebratus* ♀ it is in the form of a widely truncate angle of 60°, and in *integer* ♀ it forms an angle of about 90°—100°, with its apex a little rounded. *Vertebratus* also has the clypeus emarginate in a circular arc of 45°."

This may prove to be the same with my *N. aureopectus*, n. sp.

47. *Nematus chloreus*, n. sp.

Color greenish-ochreous; lower half of scutel, metathorax and part of tergum black. Length 0.30. Br. wings 0.64 inch.

♀. Greenish-ochreous; body short and stout; antennæ black, hardly half as long as body, third joint shorter than fourth; head pale, sutures large; lower ocellus in a basin, deep, wide, irregular, with rounded edges; nasus apparently bilobed; labrum blackish, tegulæ and anterior angle whitish; lower third of pleura and the pectus orange; basal half of scutel, middle of metathorax, and a wide stripe on the tergum partly interrupted at sutures, black; ovipositor delicate grass-green; legs the color of body, tips of posterior tibiæ and part of the tarsi blackish; inner claw tooth large and near the tip; wings hyaline; nervures brown, stigma greenish, second submarginal cell with two angles beneath.

Connecticut. One ♀.

Two ♀ specimens from English River, H. B. T. seem to belong to this species, but have the antennæ longer, no black on the scutellum, and less upon the tergum than in this.

48. *N. stigmatus*.

Nematus stigmatus, Harris' Cat.

Norton, Bost. Proc. viii, 1861, 161, 16, ♀.

Greenish-luteous: thorax and tergum black. Length 0.30. Br. wings 0.60 inch.

♀. Color greenish-luteous; body short and stout; antennæ moderate, the two basal joints black; a small black spot about each of ocelli; clypeus hardly emarginate; labrum angulate, hairy; part of mesothorax, the metathorax, the first seven segments of tergum and ovipositor sheaths, and a spot on pleura below wings, black; legs pale, tips of tarsi and claws blackish; wings hyaline, stigma and costa pale green.

Mass., (Harris' Coll.) One ♀.

It has the size and form of *N. monochroma*.

49. *N. monochroma*.

Nematus monochroma, Harris' Cat.

Norton, Bost. Proc. viii, 1861, 161, 15, ♀.

Honey-yellow; pleura piceous. Length 0.30. Br. wings 0.60 inch.

♀. Color honey-yellow; body stout; antennæ wanting, except two basal joints, which are color of body; ocelli black, set in an irregular

depression; clypeus retracted, crenate; labrum angulate; face immaculate; tegulæ, collar, venter and coxæ paler than rest of body; pleura dark, almost piceous; legs color of body; wings hyaline, stigma and costa pale yellow.

Mass., (Harris' Coll.) One ♀.

Resembles *N. luteus* of Europe.

Four submarginal cells. The second recurrent nervure received at junction of second and third cells.

32. *MESSA*, Leach.

Messa, Leach, Zool. Misc. 1814.

Fenusa, Hartig, Die Blattw. 236.

Tenthredo, Klug, Fam. viii.

Wings—One marginal and four submarginal cells, the second elongate and receiving two recurrent nervures, the second at the intersection of second and third cells. Lanceolate cell petiolate.

Antennæ 9-articulate, the third article longest, remainder beyond the fourth decreasing gradually to the apex.

Body short and stout.

Legs slender, simple; tibiæ with two short acute spurs at the tip.

Authors differ in opinion as to this genus. It is allied to *Nematus* in its neururation, and to the following genera in the form of its antennæ. Leach put it in his Stirps VI. with *Selandria* and *Athalia*. 1.—*Messa*. 2. *Athalia*. 3. *Selandria*. 4. *Fenusa*. Hartig considers it the same with *Fenusa*, which he makes a subgenus of *Athalia*. Lepel calls it a subgenus of *Nematus*, with which it is here classed.

1. *M. hyalina*.

Messa hyalina, Norton, Proc. Ent. Soc. Phil. iv, 1864, 8, 13, ♀.

Black, with white tegulæ and legs, and clear wings. Length 0.16. Br. wings 0.36 inch.

♀. Shining black; body stout; antennæ slender, longer than to base of abdomen, setaceous, first joint longer than second, third longer than fourth. Head polished, rounded, almost smooth about the ocelli; nasus slightly incurved; labrum wide, rounded and, with the mandibles at base and the tegulæ, white; abdomen somewhat stout and acute; legs white, the coxæ black, except at tip, posterior femora with a reddish tinge, tips of their tibiæ blackish. Wings perfectly hyaline, stigma almost wholly white, first submarginal cell somewhat rounded, third almost square; second recurrent nervure almost coinciding with second submarginal cross nervure; lanceolate cell petiolate; under wings with two middle cells.

New Jersey, (Coll. Am. Ent. Soc.) One ♀.

33. **PERREYIA**, Brullé.

Perreyia, Brullé, Hist. Nat. Hym. iv, 1846, 661.

Wings—One marginal, appendiculate, and four submarginal cells, of which the second receives two recurrent nervures.

Antennæ 13-articulate, almost moniliform, a little thicker in the middle than at the sides.

1. ***Perreyia comptus***, n. sp.

Black, with rufous abdomen and subviolaceous wings. Length 0.28. Br. wings 0.60 inch.

♂. Body stout. Antennæ black, thirteen-jointed, filiform and diminishing in thickness, joints rather cuneiform than moniliform, third joint nearly as long as fourth and fifth; apical joint short, obtusely rounded; head nearly as wide as thorax, polished; nasus emarginate, scutel large, and produced behind as in *Hylotoma*. Head, thorax, basal plates, and apical segment of abdomen black; abdomen yellow-red; legs black, tibial spurs short, not very sharp, claws large, without inner tooth. Wings obscure blackish, of one color; first recurrent nervure received near base of second cell, the second in the third cell, near the intersection of second and third cells; the second a little shorter than the third cell; lanceolate cell petiolate; under wings appendiculate, and with one middle cell.

Mexico. Two specimens. (H. de Saussure.)

The second recurrent nervure is received within the third submarginal, thus differing from the diagnosis of Brullé. The antennæ are formed as in the figure given by Brullé of the antenna of *P. lepida*. The submarginal bullæ in this and the following species are as in *Nematus*.

2. ***Perreyia capitulum***.

Testaceous; head and legs black, wings obscure.

Length ♂ 0.28. Br. wings 0.64 inch. Length ♀ 0.44. Br. wings 1.04 inch.

♀. Shining yellow-red; body stout; antennæ 12-jointed, formed as in last species, black; head black; a black spot on the apex of abdomen; legs black, the coxæ, trochanters and anterior femora above, yellow-red; spurs short, obtuse; claws simple; wings blackish obscure; a darker spot covering marginal and upper half of submarginal cells, as in *Hylotoma*; first submarginal cell oval; the second recurrent nervure received at intersection of second and third submarginal cell; lanceolate cell petiolate; under wings appendiculate, and with one middle cell.

♀. The female is much larger and the wings more obscure on basal half. The marginal cell is obscure as in *Hylotoma scapularis*.

Mexico. Two ♂, one ♀. (H. de Saussure.)

The legs are quite pilose and the tibiæ enlarged at apex. The head is quite small. The submarginal bullæ as in the last species.

2. *P. lepidæ*.

Perregia lepidæ, Brullé, Hym. iv, 1846, 661, pl. 46, fig. 2.—South America.

34. **CAMPTOPRIUM**, Spin.

Camptoprium, Spinola, Am. Soc. Ent. ix, 134, pl. 7, fig. 2.

Brullé, Hym. iv, 663.

Wings—One marginal, appendiculate, and four submarginal cells, of which the three first are of equal size.

Antennæ 11-articulate, having the third the longest, the remainder diminishing successively.

The prothorax forms before the mesothorax a slightly arcuate elevation.

Guiana.

35. **DICTYNNA**, Westw.

Dictynna, Westwood, Arc. Entomol. i, 1845, 24, pl. 7, 4, ♂.

Brullé, Hym. iv, 662, pl. 46, fig. 5.

Wings—One marginal, not appendiculate, and four submarginal cells, of which the second and third each receive a recurrent nervure. The first submarginal cell is hardly indicated.

Antennæ 10-articulate; articles a little larger in the middle than at the extremities.

Westwood describes a specimen from Van Dieman's Land, which he says is in fact an *Athalia* with the wings of a *Hylotoma*.

1. *D. Westwoodi*, Brullé, Hym. iv, 1846, 662, pl. 46, fig. 5.—Brazil.

36. **AULACOMERUS**, Spin.

Aulacomerus, Spinola, Am. Soc. Ent. ix, 1840, 137, pl. 7, fig. 1.

Wings—One marginal, appendiculate, and four submarginal cells, of which the second and third each receive a recurrent nervure; the first and second small.

Antennæ 9-articulate and setaceous, as in most of the Tenthredinides.

Legs.—The posterior pair have the coxæ very long, the femora bent and grooved beneath so as to receive the tibiæ, which also are a little arcuate.

Guiana.

H. Wings with two marginal and three submarginal cells.

37. **DRUIDA**, Newm.

Druida, Newman, Ent. Mag. iv, 1837, 261. Vol. v, 1838. 484.

Wings—Two marginal and three submarginal cells, the first and second each receiving a recurrent nervure.

Antennæ 10-articulate, piliform, third article long, remainder gradually diminishing.

Europe:

38. **FENUSA**, Leach.

Fenusa, Leach, Zool. Misc. 1814.

Hartig, Die Blattw. 256, Sec. 3.

Westw. Int. App. 54.

Tenthredo (*Emphytus*), Klug, Fam. viii.

Wings—Two marginal and three nearly equal submarginal cells, the first and second each receiving a recurrent nervure; lanceolate cell petiolate; under wings without middle cell.

Antennæ 9-articulate, the third joint longest, remainder gradually diminishing in length, apical joint obtuse.

Head broad, transverse; mandibles with one and two inner teeth; maxillary palpi, first joint short, third minute, remainder long and slender.

Body short and stout.

Legs simple; tibiæ with two short acute apical spurs. •

The species of this genus are among the smallest included in this family.

1. **F. curtus**.

Fenusa curtus, Norton, Proc. Ent. Soc. Phil. i, 1861, 199, ♀.

Black; abdomen piceous; legs ochraceous. with black femora. Length 0.14. Br. wings 0.32 inch.

♀. Body stout; antennæ toward the tip, labrum and mandibles piceous; a smooth fovea between antennæ; tegulæ and abdomen piceous; thorax black, polished; each segment of abdomen depressed toward apex; legs ochraceous, their coxæ and femora, except at tip, black; apical joints of tarsi blackish; wings semi-transparent, stigma and costa dark, nervures black.

Penn., (Coll. Am. Ent. Soc.).

2. **Fenusa ambiguus**, n. sp.

Black; middle of tergum, venter and legs yellow-red. Length 0.14. Br. wings 0.32 inch.

♂. Body short and stout; antennæ piceous at base beneath; tegulæ and edge of collar whitish, spurs sharp; claws simple; wings hyaline, stigma fuscous at base, also most of costa.

Penn. One ♂. (Smith. Inst.)

39. **FENELLA**, Westw.

Fenella, Westwood, Mod. Class. ii, 1840, App. 54.

Brullè, Hym. iv, 662.

Wings—Two marginal and three equal-sized submarginal cells, the first and second each with a recurrent nervure.

Antennæ 11-articulate, slender.

Europe.

Wings with four submarginal cells.

40. **HETERARTHUS**, Stephens.

Heterarthrus, Stephens, Brit. Ent. Mand. vii, 1835, 94.

Westw., Mod. Class. 2, App. 54.

Phyllotoma, Fallen, Mon. Tenth. Suec. 1829.

Hartig, (*Emphytus*) ii, Die Blattw. 254.

Decatria! Westw., Lardner, Cyc.

Tenthredo (*Emph.*), Klug, Fam. viii.

Wings—Two marginal and three submarginal cells, the first and second each containing a recurrent nervure. The first having an incomplete cell at its base; lanceolate cell with oblique cross line; underwings without any or with one middle cell.

Antennæ 12—15 articulate, the third nearly twice as long as the fourth, remainder short.

Europe.

Wings with three submarginal cells.

41. **MELICERTA**, Stephens.

Melicerta, Stephens, Brit. Ent. Mand. vii, 1835, 94.

Wings—Two marginal cells, the basal one smallest, and three submarginal ones, the first longest, second shorter, each with a recurrent nervure.

Antennæ 9-articulate, third nearly twice as long as the fourth.

Head broader than thorax, thorax somewhat globose.

England.

42. **EMPHYTUS**, Leach.

Tenthredo (*Emphytus*), Klug, Fam. iv, Berl. Mag. 1814, Vol. viii, 284.

Emphytus, Leach, Zool. Misc.

Hartig, Die Blattw. 245, Div. I.

Stephens, Brit. Ent. Mand, vi.

Dolerus, II. Jurine, &c.

Wings short; two marginal and three submarginal cells, the first and second each with a recurrent nervure; the first longest, bent, its hinder corners angular and rounded; lanceolate cell contracted, and either with or without oblique cross line; under wings without any middle cell or with one or two.

Antennæ 9-jointed, filiform, third, fourth and fifth joints of nearly equal length.

Head transverse, eyes prominent, nasus incurved, wide; mandibles short and wide, with one inner tooth; maxillary palpi long and slender, first joint minute, apical joint shorter than those before it; first and second joints of labial palpi shortest.

Abdomen rather long, cylindrical in males, broad and carinate in females.

Legs slender; tibiæ with two short apical spurs.

Larvæ with twenty-two legs. They feed upon the leaves of plants. The habits of a species which feeds upon the rose have been noted by DeGeer, Bouché and Hartig. That of *Emph. cinctus* is said to pass its pupa state in the stem of the rose, into which the larva burrows. Nothing is known about our own species as yet.

Table to assist in finding the Species.

Section I.—(*Emphytus*), Hartig.

Lanceolate cell with oblique cross line; hinder wing with no middle cell.

Color black—a white spot on pleura.....1, *inornatus*.

Color black—middle of abdomen rufous.....2, *apertus*.

Color black—a white band on tergum; femora yellow-red.....3, *mellipes*.

Color black—a white band on tergum; femora black...4, *cinctipes*.

Section II.—(*Harpiphorus*), Hartig.

Lanceolate cell with oblique cross line; hinder wings with one middle cell.

a. Abdomen long; first tarsal joint as long as all the remainder.

Color testaceous, thorax black, scutel pale.....5, *varianus*.

Color testaceous, thorax black, scutel black.....6, *versicolor*.

Color testaceous, two black vittæ on mesothorax.....7, *testaceus*.

Color testaceous, tips of antennæ black.....8, *semicornis*.

Color black, scutel pale.....9, *tarsatus*.

b. Abdomen short; first tarsal joint not as long as all the remainder

Color black; brownish spots on each segment of tergum10, *maculatus*.

Color black, tergum black, tibiæ and tarsi white.11, *recens*.

tibiæ and tarsi white before.....12, *articulata*.

Color black, tergum at base white.....13, *platycerus*.

Section III.—(*Aneugmenus*), Hartig.

Lanceolate cell with no cross line; hinder wings with two middle cells.

Section I.—(*Emphytus*), Hartig.

Lanceolate cell with oblique cross line; under wings without middle cell. Body lengthened.

1. *E. inornatus*.

Dolerus inornatus, Say, Long's Second Exp. II, 1824, 319, 1. ♀.

Emphytus inornatus, Norton, Bost. Proc. viii, 155, 1. ♀ ♂

"Body black, polished; feet white; tarsi dusky. Length ♂ ♀ 0.25. Br. wings 0.52 inch.

♀. Body slender; antennæ hardly longer than to base of thorax, third, fourth and fifth joints cylindrical, not very distinctly separated,

third largest; remainder shorter and compressed at ends beneath; head finely punctured, a deep suture extending from base of each antennæ to occiput, the ridge between produced between antennæ in a sort of blunt, rounded prominence; nasus incurved, with a short spine at each corner; labrum, palpi, tegulæ, collar, a short line on pleura above intermediate coxæ, and the legs, white; a band near apex of posterior femora, the ends of their tibiæ and their tarsi blackish, claws with an inner tooth, distinct from tip; wings with a violaceous tinge, nervures blackish.

♂. The body of the male is quite slender, the apex of the four hinder femora and their tibiæ above, black.

New England and Middle States, Virginia. Common.

2. *E. apertus*.

Emphytus aperta, Harris' Cat.

Emphytus apertus, Norton, Bost. Proc. viii, 1861, 155, 2. ♀ ♂.

Black; tergum with rufous spots, venter and legs white. Length 0.19—0.25. Br. wings 0.36—0.44 inch.

♀. Body long and slender, shining black; antennæ as in *E. inornatus*. Head with a depression at sides of venter and a sinus behind ocelli, ridged on each side; nasus slightly incurved, and with the labrum, base of mandibles, palpi, tegulæ, two sides of anterior angle and a line above intermediate coxæ, white; tergum with reddish connected spots on each segment; venter paler, at apex black; legs reddish-white, apical medial tarsi and tip of posterior tibiæ and their tarsi black; spurs long, inner anterior tibial spur bifid, inner tooth of claw large and near the tip. Wings hyaline, nervures blackish, junction of stigma and costa white.

♂. The male has the antennæ ferruginous beneath, apex of venter pale, base black.

Mass., Conn., Pa., Va., Ill.

3. *E. mellipes*.

Emphytus mellipes, Harris' Cat.

Norton, Bost. Proc. viii, 1861, 155, 3. ♀.

Black, slender; a white band around the fifth abdominal segment; legs whitish. Length 0.34. Br. wings 0.58 inch.

♀. Body long and slender, shining black, polished; antennæ rather stout, not extending beyond base of abdomen, slightly ferruginous at tip beneath, the four apical joints compressed at their base; channels forming a sort of W behind ocelli; a sinus below lower ocellus and a process between antennæ; nasus ridged in middle, deeply notched, with sharp angles before; the three apical joints of palpi, tegulæ, a spot on basal plates and a band on fourth segment of abdomen white;

legs honey-yellow, base of coxæ black; their apex, trochanters and base of femora white; tarsi fuscous above; inner tooth of claw large; wings faintly smoky; base of stigma and the costa pale.

♂. No white spot on the tergum or basal plates; tarsi blackish.

Maine, N. H., Mass., Conn., N. Y., Penna.

4. *Emphytus cinctipes*, n. sp.

Black; a white band on the fifth segment of abdomen and on the base of all the tibiæ; femora black. ♂ ♀. Length 0.34. Br. wings 0.58.

♀. Body formed as in *E. mellipes*; tegulæ, a spot on basal plates and band on fourth segment of abdomen, interrupted in middle beneath, white; coxæ and femora black; tips of coxæ, trochanters and base of femora white; a white band at base of all the tibiæ; tibiæ ferruginous, tarsi blackish; inner claw tooth large; wings hyaline, base of stigma white.

♂. Resembles female; no white band on abdomen.

Var. Tibiæ all blackish toward apex.

Maine, New York. Eight ♀, four ♂.

This is closely allied to *E. mellipes*. Klug mentions the *Tenthredo* (*Emphytus*) *grossulariæ* as having been found in Baltimore. (Berl. Mag. 1814, 8, 288.)

Section 2.—(*Harpiphorus*), Hartig.

Lanceolate cell with oblique cross line; hinder wings with one middle cell.

a. Abdomen long as in *Tenthredo*, cylindrical in ♂, flattened and rather acute in ♀. The first joint of hinder tarsi as long as all the remainder.

5. *E. varianus*.

Emphytus varianus, Norton, Bost. Proc. viii, 1861, 156, 4, ♂ ♀.

Testaceous; thorax black; antennæ with the three basal joints red, the fourth and fifth black, remainder white.

Length ♂ 0.38. Br. wings 0.70 inch. Length ♀ 0.45. Br. wings 0.90 inch.

♀. Body long and rather stout, color testaceous; antennæ longer than base of thorax, stout, serrate beneath, third joint longer than fourth, the three basal joints rufous, the fourth and fifth black, and the four apical joints white; head polished, quite thick behind the eyes; deep sutures from nasus to summit on each side of ocelli, forming a bilobed enclosed space behind; a deep basin below lower ocellus; nasus deeply notched; a spot about ocelli, and behind to the neck, and one below each of antennæ, black; labrum whitish; thorax rather sparsely and coarsely punctured, black; the tegulæ, scutel and ridge behind whitish; sutures of mesothorax, part of metathorax and the abdomen reddish-testaceous; abdomen flattened, edges of each segment blackish; legs reddish-yellow; coxæ, middle of four anterior femora, and apical half of posterior femora and of tibiæ black; apex of coxæ,

trochanters, base of femora and the tibiæ white; inner claw tooth large; wings long, outer half smoky, basal half of stigma pale; second recurrent nervure received near intersection of first and second submarginal cells.

♂. Face mostly black; labrum white; abdomen paler, the four anterior femora without black bands.

Conn., N. Y., Va., Ill.

6. *Emphytus versicolor*, n. sp.

Chestnut-red; thorax black; four apical joints of antennæ and the tarsi white. Length 0.40. Br. wings 0.80 inch.

♀. Body long and not very stout, color chestnut-red; antennæ not longer than base of thorax, thick, serrate beneath, third joint but little longer than fourth, the two basal joints piceous, the three next black, remainder white; face as in *E. varianus*, not so much depressed below antennæ; clypeus not deeply notched; a black spot from below antennæ to summit; labrum and tegulæ white; thorax black, scutel black, basal plates rufous, legs rufous, trochanters and tarsi white; coxæ, basal tip of the four anterior femora and the apex of posterior tibiæ blackish; wings smoky, base of stigma white; second recurrent nervure a little removed from junction of first and second submarginal cells.

Illinois, (P. H. Uhler). One ♀.

The abdomen is more slender than that of *E. varianus*.

7. *E. testaceus*.

Emphytus testaceus, Norton, Bost. Proc. viii, 1861, 156, 5, ♀.

Testaceous; the two basal joints of antennæ rufous, the three next black, remainder white. Length 0.40. Br. wings 0.80 inch.

♀. Color paler than in the preceding species; antennæ but little longer than to base of thorax, stout, serrate, third joint longest, fourth longer than fifth; the two basal joints testaceous, the three next black, remainder white, extreme tip black; head as in last species; a small black spot above ocelli; labrum and tegulæ pure white; a vitta on each side lobe of mesothorax, and a spot on pectus, enlarged before each pair of coxæ, black, scutel pale; legs testaceous; coxæ and tips of posterior tibiæ black; a spot on hinder coxæ, trochanters and tarsi white. Wings yellowish-smoky, darkest toward apex, base of stigma white; second recurrent nervure a little removed from base of second submarginal.

Penn., Virginia.

The abdomen is nearly cylindrical.

8. *E. semicornis*.*Emphytus semicornis*, Say, Bost. Jour. I, 1835, 220, 2, ♀.

Norton, Bost. Proc. viii, 156, 6.

"Honey-yellow; tip of the antennæ and disk of the pectus black. Length over three-tenths of an inch.

"Body honey-yellow; antennæ, the four terminal joints black, nasus deeply emarginate; labrum and mouth pale yellowish, the former rounded at tip; stemmata black; thorax with a dusky line on the two middle lobes; scutel dusky on the posterior edge; metathorax dusky near the scutel; abdomen immaculate, rather paler at base and beneath; wings hyaline, nervures blackish; base of the carpus yellowish-white; pectus before and on the middle black; coxæ whitish, tarsi pale, posterior thighs and tibiæ blackish at their tips."

Indiana, (Say). Connecticut.

The only important difference between this and the preceding species appears to be in the color of the apical joints of the antennæ. A single ♂ taken in Farmington, Conn., has the five apical joints of antennæ black, the head wholly rufous, except a large spot about the ocelli, and the back of head black. The scutellum is wholly rufous.

9. *E. tarsatus*.*Emphytus tarsatus*, Say, Bost. Jour. I, 1835, 219, 1, ♀.

Norton, Bost. Proc. viii, 157, 7, ♀.

Black; the four apical joints of antennæ, trochanters and tarsi white.

Length ♂ 0.32. Br. wings 0.52 inch. Length ♀ 0.60. Br. wings 1.12 inch.

♀ ♂. Body long and stout; antennæ longer than base of thorax, stout, flattened, serrate, black, with the four apical joints white; head as in *E. varianus*, with the sutures at sides of ocelli widened below and enclosing the base of antennæ; nasus deeply incurved, rugose; labrum white, its edge rufous; tegulæ piceous or yellow; scutel in middle white; legs black; all the trochanters, the apical half of four anterior tibiæ and their tarsi and the posterior tarsi, except first joint, white, (sometimes the first joint also). Wings smoky hyaline, base of stigma white; second recurrent nervure a little removed from intersection of second and third submarginals.

Indiana, (Say), Mass., Conn., West Va.

The species embraced in this section resemble the genus *Tenthredo* at first sight.

- b. Abdomen short; second recurrent nervure received in middle of second submarginal cell; first joint of hinder tarsi not as long as all the remainder.

10. *E. maculatus*.

Emphytus maculatus, Norton, Bost. Proc. viii, 1861, 157, 8, ♀ ♂.

Black, with an interrupted brownish band on each segment of abdomen. Length 0.20—0.22. Br. wings 0.42—0.47 inch.

♀. Body short, flattened; apex of abdomen suddenly compressed; antennæ as long as to base of thorax, rather stout, slightly serrate, and somewhat ferruginous beneath, third joint longest, fourth and fifth equal; head (not so thick as in div. *a*), finely punctured, widely but not deeply channeled at sides of ocelli from nasus to summit; a ridge down the middle of nasus, its edge moderately crenate; nasus, labrum, tegulæ and edge of collar whitish; a brownish interrupted band on each segment of tergum; legs varying from reddish-brown to white, their coxæ, except at tip, the four anterior femora beneath, apical joints of their tarsi, the posterior femora, apical half of tibiæ and their tarsi, except base of basal joints, black; inner claw tooth short; wings hyaline, faintly clouded.

♂. The male has the antennæ much flattened and brown beneath; the bands on abdomen whitish; legs with less of black, coxæ and posterior femora above, black.

Maine, Conn., New York.

The position of the three following species is not known, but they are likely to belong to this section.

11. *E. platycerus*.

Emphytus platycerus, Say, Bost. Jour. I. 1835, 220, 3, ♂.

Norton, Bost. Proc. viii, 157, 10.

"Black; tibiæ and tarsi white; first and second joints of the antennæ short, equal." Length less than three-twentieths of an inch,

♂. Body short, robust, black, polished; antennæ rather stout, compressed, first and second joints remarkably short, when taken together less than half the length of either of the others; remaining joints subequal, the third hardly longest; mouth dull piceous; wing-scale dull piceous; wings fuliginous, with a violaceous tinge, feet white; thighs in the middle and coxæ black."

Indiana. Not seen.

This bears a resemblance to the male of *E. maculatus*, but has no bands on the tergum, which Say could hardly have overlooked.

12. *E. recens*.

Emphytus recens, Say, Bost. Jour. I, 1835, 221, 4, ♂.

Norton, Bost. Proc. viii, 157, 9.

"Antennæ, basal joint white; pectus and feet white. Length one-fifth of an inch.

♂. Head black; basal joint of antennæ, nasus, labrum and mouth white; thorax black, with a white collar and wing-scale; wings hya-

line, nervures fuscous; tergum, on the basal half, white, with three dilated black bands, slightly interrupted in the middle, terminal half somewhat fulvous, with about two marginal black spots and a larger double one each side near the tip; lateral processes at tip obvious; pectus white; pleura with a dilated black line; feet white, intermediate tibiæ and tarsi with a black line; posterior thighs tinged with honey-yellow, their tibiæ and tarsi dusky or blackish."

Indiana. Not seen.

13. *E. articulata*.

Tenthredo (Emphytus) articulata, Klug, Berl. Mag. viii, 1814, 284, 204. Fam. ix, ♂.

"Black; legs fuscous, joints or knuckles whitish, wings obscure, stigma fuscous. Length $2\frac{1}{4}$ lines. Br. Wings $4\frac{1}{2}$ lines.

The antennæ are almost as long as to base of abdomen. Head, thorax and abdomen wholly shining black; back plates whitish; on the legs, the base of shanks, and on the forward legs, the tibiæ and tarsi are on the forward side pale whitish-yellow. The wings are pale brown, the nerves as well as the stigma are blackish-brown."

"Baltimore. One male."

Section 3.—(*Aneugmenus*), Hartig.

Lanceolate cell without cross line; hinder wings with two middle cells.

Some species of *Selandria*, especially *Selandria flavipes*, in which the first submarginal cross nervure is indistinct, are likely to be mistaken for this genus, but the first cell of *Emphytus* is never rounded on either costal corner, as in *Selandria*.

43. **DOLERUS.**

Dolerus and *Dosytheus*, Leach, Zool. Misc. 1814.

Dolerus, Klug, Die Blattw. 1818.

Jurine, Fam. I, Nouv. Meth. 1807.

Lepel, Fam. †††, Mon. Tenth. 120.

Hartig, Die Blattw. 229.

Hylotoma, Fab., Fam. 3.

Tenthredo, Lin., Fab., &c.

Wings—Two marginal cells, divided by a straight nervure, and three submarginal cells, the first small and rounded, the second long and bent, receiving two recurrent nervures; lanceolate cell with oblique cross vein; four submarginal bullæ, viz.: one on the first transverse nervure, two on the second, and one on the submarginal nerve at or near the first recurrent nervure; under wings with two middle cells.

Antennæ 9-articulate, filiform, third joint longer than fourth, or of equal length.

Head broad, eyes prominent, the surface coriaceous with large pits, with no distinct sinus or depression on the vertex; nasus wide and

deeply notched, labrum small; mandibles sharp, with three or four inner teeth.

Thorax punctured. Abdomen smooth and shining, stout, carinated and acute in the females, obtuse in the males.

Legs short; tibiæ with two short spurs, the inner spur of anterior pair bifurcate; claws with an inner tooth.

Larvæ twenty-two-footed, (six pectoral, fourteen abdominal and two caudal), not ejecting a fluid from the sides of the body. Little is known of their habits.

Leach separated, under the name of *Dosytheus*, all those species having the third joint of antennæ longer than the fourth, while his *Dolerus* has the third and fourth joints of equal length. Stephens adds that *Dosythei* invariably have bright colors on the abdomen, while the *Doleri* are of one color—blue and black.

Hartig does not consider this, with minor details, a sufficient generic distinction, and his view has been adopted in the following list. In all of our species, the third joint is longer than the fourth, although the difference is less marked in the dark-colored species.

Table to assist in finding the Species.

- A. *Violaceous.*
 - a. Wholly of one color..... **unicolor.**
 - b. *Thorax* partly rufous..... **arvensis.**
- B. *Black.*
 - a. Wholly black..... **sericeus.**
 - b. *Thorax* partly rufous, abdomen black..... **collaris.**
 - c. *Thorax* black.
 - 1. Abdomen red banded.
 - 1. Femora black..... **aprilis.**
 - 2. Femora rufous..... **apricus.**
 - 3. Femora rufous, mouth and tergulæ white..... **albifrons.**
 - 2. Abdomen wholly rufous..... **abdominalis.**
 - d. *Thorax* partly rufous.
 - 1. Abdomen red banded..... **similis.**
 - 2. Tergum red banded..... **maculicollis.**
- C. *Rufous.*
 - e. *Thorax* partly rufous, abdomen rufous..... **bicolor.**
 - versa.**
 - f. *Thorax*, except the pectus, rufous, abdomen rufous..... **Tejoniensis.**

Section 1.—*Dolerus*.

Lanceolate cell with oblique cross line.

1. **D. unicolor.**

Tenthredo unicolor, Beauv., Ins. Afr. et Am. 1805, 97. Hym. Tab. ix, 2, ♂.

Dolerus unicolor, Lepel, Mon. Tenth. 125, 373.

Norton, Bost. Proc. viii, 154, ♀.

Blue-black, with metallic reflections on the thorax. Length 0.28. Br. wings 0.60 inch.

♂. Body stout, violaceous. Antennæ black, long, third and fourth joints equal, apical joint slender and as long as the preceding; head and pleura granulated; thorax above coarsely punctured; tergum and legs smooth and shining, tibiæ pilose, nasus with a deep and angular notch, tarsi stout, densely covered with black setaceous hair; inner claw tooth obtuse, removed from the tip; wings violaceous subhyaline, stigma and costa black.

New England, Middle States, Md., Mo. Common.

2. *D. arvensis*.

Dolerus arvensis, Say, Long's Second Exp. II, 1824, 319, 2, ♀.

Dosytheus arvensis, Norton, Bost. Proc. viii, 151, 1.

Blue-black; the prothorax and mesothorax rufous, with a black vitta on anterior lobe. Length 0.32—0.36. Br. wings 0.66—0.74 inch.

♀. Rather long and stout, color violaceous; antennæ black, third joint longer than fourth, apical joint shorter and more slender than the preceding; head and body punctured as in *D. unicolor*; a yellowish rufous spot covers the prothorax and mesothorax; a vitta on the anterior lobe of mesothorax black; scutel violaceous; legs the color of body; formed as in *D. unicolor*. Wings subviolaceous, nervures black.

Var. a. The vitta on the mesothorax extends across the side lobes, forming a three-lobed spot.

New England, Middle States, Fla., Mo. Very common.

Taken in April, on willows. No males. The ground color is precisely the same with that of *D. unicolor*, of which no females have yet been taken. The formation of the tarsi is also similar, being shorter than in the following species, and the apical joint shorter.

3. *D. sericeus*.

Dolerus sericeus, Say, Long's Second Exp. II, 1824, 320, 3, ♂ ♀.

Norton, Bost. Proc. viii, 151, 1.

"Entirely black, immaculate." Length 0.32—0.40. Br. wings 0.64—0.80 inch.

♂. Body long and rather slender, color shining black; antennæ long, third joint rather longer than fourth, final joint but little shorter than the preceding; abdomen rather longer than in *D. unicolor* and more rounded at the apex; rather more of white hair upon the face and legs; posterior tibiæ at tip stout; tarsi long and slender, less pilose, apical joint long; inner claw tooth obtuse; wings subviolaceous, nervures black.

♀. The female is larger and the abdomen stouter; antennæ shorter, not extending beyond base of abdomen, third joint longer than fourth.

The males are very abundant, the females rare.

A single specimen (♂) from Massachusetts, in the Collection of the American Entomological Society, has four submarginal wing-cells, the

second and third each with a recurrent nervure as in *Strongylogaster*, but in other respects it does not vary from the above.

4. *D. collaris*.

Dolerus collaris, Say, West. Quart. Rep. II, 1823, 72, ♀.

Dosytheus collaris, Norton, Bost. Proc. viii, 151, 2.

"Black; thorax rufous before." Length 0.32—0.36. Br. wings 0.66—0.74 inch.

♀. Abdomen stout, flattened, acuminate; antennæ short, as in *D. sericeus*, as also the punctures; color shining black; the tegulæ, anterior lobe of mesothorax, anterior angle, more or less of breast before anterior legs and a triangle on upper corner of pleura yellow-red; legs the color of body; wings varying from subviolaceous to hyaline.

Var. a. The whole upper half of pleura and sutures near the scutellum rufous.

Var. b. Pleura almost entirely black.

Maine, Connecticut, Illinois, Missouri, (Say). April 24th.

No males taken. (22 ♀).

5. *D. aprilis*.

Dosytheus aprilis, Norton, Bost. Proc. viii, 1861, 152, 4, ♀ ♂.

Black; a wide rufous band on abdomen. Length 0.30—0.38. Br. wings 0.60—0.70 inch.

♀. Body rather stout; antennæ moderate, third joint nearly as long as fourth and fifth together; fourth, fifth and sixth nearly equal; head nearly as wide as thorax; nasus deeply notched; abdomen rufous, the basal plates, apical half of sixth and the two apical segments black; legs black, the anterior pair of tibiæ and all the tarsi more or less ferruginous; lower half of face, and of pleura and tibiæ covered with white hair; claws with an obtuse inner tooth; wings faintly clouded, nervures blackish.

♂. The male has more pubescence upon the face and pleura; the third joint of antennæ not so long as in ♀ and sometimes more than the three apical segments of abdomen black, especially beneath.

Maine, Connecticut, New Jersey, New York, Maryland, Mackenzie River, Hudson's Bay Territory.

A great many specimens taken in April on the *Salix vitellina*.

6. *D. apricus*.

Dolerus apricus, Say, Harris' Cat.

Dosytheus apricus, Norton, Bost. Proc. viii, 1861, 152, 3, ♀ ♂.

Black; a wide band on femora and most part of legs rufous. Length 0.25—0.30. Br. wings 0.50—0.60 inch.

♀. Not so large as *D. aprilis*, body stout; antennæ moderate, third joint one-third longer than fourth, punctures of head and body not so

coarse as in *D. aprilis*, vertex not coriaceous; abdomen rufous, the basal plates and three apical segments black; legs black at base, the anterior femora, their tibiæ beneath, and the four posterior femora, except at tip, yellow-red; tarsi fuscous; remainder black; inner claw tooth obtuse; wings hyaline, faintly clouded toward tips, nervures blackish, lower half of stigma piceous.

♂. The male has all the femora rufous, except the posterior pair at tip, the four anterior tibiæ rufous, posterior tibiæ and all the tarsi fuscous; face below the antennæ whitish.

New England, N. Y., N. J., Md., Ill., Mackenzie River, H. B. T.

7. *D. albifrons*.

Dosytheus apricus, var. *albifrons*, Norton, Bost. Proc. viii, 1861, 152, 3, ♀ ♂.

Black; a wide band on abdomen and most part of the legs rufous; mouth and tegulæ white. Length 0.19—0.26. Br. wings 0.38—0.52 inch.

♀. Smaller than the preceding; antennæ and punctures as in *D. apricus*; more of white hair about the orbits and pleura; edge of nasus, labrum, tegulæ, the six basal segments of abdomen and the legs rufous; tips of posterior femora, of the four anterior tibiæ, more or less of posterior tibiæ and all the tarsi blackish; all the trochanters and a band at base of posterior tibiæ whitish; no perceptible inner claw tooth; wings hyaline, nervures black.

Var. *a*. All the coxæ and trochanters black; all of legs darker.

Var. *b*. Only the tip of posterior tibiæ black.

♂. The male has the basal joints of antennæ reddish beneath; a spot between antennæ, the face beneath and the tegulæ white.

Maine, Conn., N. Y. June. (15 ♀, 34 ♂).

This is small, and can readily be distinguished from *D. apricus* by its white mouth and tegulæ, and whitish trochanters and band on femora.

8. *D. abdominalis*.

Dosytheus abdominalis, Norton, Bost. Proc. viii, 1861, 153, 8, ♀ ♂.

Black; abdomen wholly rufous. Length 0.28—0.33. Br. wings 0.56—0.66 inch.

♀. Abdomen compressed, not very long; antennæ moderate, third joint a little longer than fourth; fourth, fifth and sixth each a little shorter than the one preceding; head and pleura coriaceous, the cross suture back of ocelli distinct; nasus deeply incurved; basal plates and abdomen rufous; ovipositor sheath and legs black; hinder coxæ rufous at base; inner tooth of claw very obtuse and short; wings violaceous subhyaline, nervures black.

♂. Antennæ longer, stoutest toward the base; abdomen slender, basal plates black; tibiæ and tarsi indistinctly piceous.

Connecticut, Massachusetts.

But one female and a great many males taken on the willow.

9. *D. similis*.

Dosytheus similis, Norton, Bost. Proc. viii, 1861, 153, 5, ♀.

Black; the prothorax, tegulæ and a wide band on abdomen rufous. Length 0.33. Br. wings 0.62 inch.

♀. Abdomen moderately long and stout; antennæ rather enlarged in middle, third joint one-half longer than fourth, fourth and fifth equal, sixth shorter; head moderately rugose; pleura very coarsely pitted; lower half of the face, base of pleura and the tibiæ with abundant white hair; the prothorax, anterior lobe of mesothorax, tegulæ and abdomen, except the two apical segments, rufous, remainder of body black; anterior knees rufous, their tibiæ and tarsi fuscous; inner tooth of claw obtuse; wings hyaline, apical half faintly smoky.

Var. a. A broad black vitta on anterior lobe of thorax. (Illinois).

Var. b. a rufous line on each side of mesothorax from tegulæ to scutel; anterior tibiæ rufous. (Illinois).

Maine, Conn., Md., Ill.

10. *D. maculicollis*.

Dosytheus maculicollis, Norton, Bost. Proc. viii, 1861, 153, 6, ♀.

Black; thorax rufous before; abdomen ferruginous, venter black. Long 0.35. Br. wings 0.70 inch.

♀. Quite stout; antennæ moderate, third joint a little longer than fourth; fourth, fifth and sixth of equal length; head and pleura coriaceous; nasus incurved, not deeply notched, sericeous; tegulæ, apical half of anterior lobe, prothorax and upper anterior third of pleura rufous; basal plates, tergum, except apex, and sides beneath ferruginous, venter black; legs black, tarsi piceous; inner claw tooth obtuse, not very small; wings clouded.

Brooklyn, N. Y. (One ♀.)

11. *D. bicolor*.

Tenthredo bicolor, Beauv., Ins. Afr. et Am. 1805, 96. Hym. Tab. 9, fig. 1.

Dolerus bicolor, Lepel, Mon. Tenth. 122, 360.

Dosytheus bicolor Norton, Bost. Proc. viii, 1861, 153, 7, ♂.

"Yellow; antennæ, head and spots on thorax, breast, scutellum, feet, oviduct and veins of the wings black." Length 0.30. Br. wings 0.60 inch.

♀. Abdomen short and stout; antennæ hardly longer than to base of abdomen, third joint one-third longer than fourth; nasus deeply incurved; labrum smooth, piceous; head, side lobes of mesothorax, scutel and post-scutel, spots at sides and on basal plates, breast, a spot at base of ovipositor and the legs black, remainder of body yellow rufous; wings tinged with violaceous, nervures black.

Var. *a.* Scutel pale.

Var. *b.* A large black spot on venter.

Maine, Mass., Conn., N. Y., Md., Ill.

Taken April 24th, on the willow.

12. *Dolerus versa*, n. sp.

Rufous; the head, anterior lobe of thorax, scutel and behind, breast, ovipositor and legs black; wings violaceous. Length 0.42. Br. wings 0.88 inch.

♀. Body large and very stout; abdomen much flattened; antennæ rather long, third joint longer than fourth, color of body yellow-red; head black; anterior lobe of mesothorax, scutel and behind, pectus and ovipositor sheath black; basal plates rufous; legs black; inner tooth of claws strong; wings obscure violaceous, nervures black.

Mass., (Am. Ent. Soc.) Maryland, (T. Glover). Two ♀.

This resembles *D. bicolor* in form and punctures, but is very much larger.

13. *D. Tejoniensis*.

Dosytheus Tejoniensis, Norton, Bost. Proc. viii, 1861, 154, 9, ♀.

Testaceous, with the head and breast black; wings violaceous. Length 0.48. Br. wings 0.90 inch.

♀. Body large and stout; abdomen long; antennæ large, third joint but little longer than fourth; fourth, fifth and sixth each diminishing in length; head black, polished above ocelli, roughened below, a U-shaped sinus back of ocelli; nasus but little incurved, body stout, thorax polished; pleura with scattered pits, shining; pectus, ovipositor sheath and legs black; inner claw tooth large, removed from tip; wings violaceous, subopaque, nervures black.

Ft. Tejon, Cal., (Smiths. Inst.) Two ♀.

Section 2.—(*Pelmatopus*,) Hartig.

Lanceolate cell closed. Under wings with two middle cells.

Inhabits Europe.

Wings with two marginal and four submarginal cells.

44. *DINEURA*, Dahlb.

Dineura, Dahlb., Consp. Tenth. 1835.

Hartig, Die Blattw. 226.

Tenthredo, Sec. *B.* Klug.

Sec. *b.* Stephens.

Wings—Two marginal and four submarginal cells, the second submarginal receiving two recurrent nervures; the third submarginal almost equal sided; lanceolate cell petiolate; four submarginal bullæ, viz.: one on each transverse nervure, one on the submarginal nerve at reception of second recurrent nervure. Under wings with two middle cells.

Antennæ 9-jointed, mostly slender and bristle-shaped.

Body as in *Nematus*.

1. *Dineura linitus*, n. sp.

Black; prothorax, side lobes of mesothorax, pleura and legs yellow-red. Length 0.18. Br. wings 0.40 inch.

♀. Body rather slender, shining black; antennæ slender, about two-thirds the length of body, third joint a little longer than fourth; head polished, rounded, with little or no depressions about ocelli; nasus slightly incurved, edge of labrum rufous; tegulæ, prothorax, the two side lobes of mesothorax, pleura and apex of abdomen yellow-red; middle of pectus black; legs paler than thorax, apical tarsi fuscous; claws apparently with no inner tooth. Wings hyaline, ample; stigma pale, marginal nervure received in middle of third submarginal cell, which is small and square.

Brunswick, Me., (A. S. Packard, Jr.) One ♀.

2. *Dineura lateralis*, n. sp.

Black; the pleura, venter (in part) and legs rufous. Length 0.16. Br. wings 0.36 inch.

♀. Body short and stout, shining black; antennæ slender, more than half the length of body, joints decreasing very gradually in length; head polished, no depressions about ocelli; nasus not deeply emarginate, labrum piceous; tegulæ, collar, a large spot on pleura, apical segment of tergum, apical two-thirds of venter and legs yellow rufous, basal half of stigma whitish; second recurrent nervure received very near the junction of second and third submarginals; third submarginal longer than wide; lower under wing middle cell much the largest.

Brunswick, Me., (A. S. Packard, Jr.) One ♀.

3. *D. litura*.

Tenthredo (all) *litura*, Klug, Berl. Mag. vii, 1814, 2d Fam. 83, 73.

"Luteous. The head and a longitudinal dorsal vitta black. Length $2\frac{1}{4}$ lines. Br. wings $5\frac{1}{4}$ lines.

Antennæ bristle-shaped, somewhat longer than thorax, black; clypeus truncate, on the edge red-yellow; the tips and mandibles are likewise red-yellow, the latter brown at tip; mouth yellowish; a broad black vitta extends over the back of thorax as far as the scutel; the abdomen and legs are of one color; wings perfectly clear; nerves and costa yellow-brown, costal space not filled up; the third cubital space which receives no recurrent nervure is unusually small and pentagonal."

Not seen, and hence the section to which it belongs is not certain.

Section 2.—(*Hemichroa*,) Stephens.

Hemichroa, Steph., Mand. vii, 1835.

Leptocerca, Hartig, Die Blattw. 228. *Dineura*, Sec. 2.

Wings—Two marginal and four submarginal cells, the second submarginal receiving two recurrent nervures, the third submarginal widened toward the end; lanceolate cell contracted; under wings with two middle cells.

Antennæ 9-articulate, long, setaceous.

Body as in *Selandria*; hinder tibial spurs long.
Europe.

Section 3.—(*Mesoneura*,) Hartig.

Mesoneura, Hartig, Die Blattw. 228, Sec. 3.

Pristis, Lepel, Brullé, Hym. v, 665.

Wings—Two marginal and four submarginal cells, the second receiving two recurrent nervures, the second being received at the intersection of the second and third submarginals; lanceolate cell petiolate; under wings with two middle cells.

Antennæ 9-articulate, formed as in *Selandria*.

Body as in *Selandria*; hinder spurs short.

4. *Dineura parvus*, n. sp.

Black; the apex of venter and the legs rufous. Length 0.14. Br. wings 0.30 inch.

♂. Body short and stout; antennæ moderate, filiform, not slender, third and fourth joints equal, apical joints piceous; head coriaceous, without depressions about ocelli; nasus truncate; tegulæ and apex of venter piceous; legs yellow rufous; wings hyaline, nervures brown, marginal cross nervure curved, received beyond middle of third submarginal cell, which is a little longer than wide.

Farmington, Conn. One ♂.

45. *SCIAPTERYX*, Stephens,

Sciapteryx, Stephens, Brit. Ent. Mand. vii, 1835, 56.

Wings short and broad, two marginals, divided by a curved vein, and four submarginal cells, of which the second and third each receive a recurrent nervure.

Antennæ 9-articulate, short, irregular, third as long as fourth and fifth together, remainder gradually diminishing in length.

Head broad, large, rough; eyes small; clypeus and labrum emarginate.

Abdomen short, stout, depressed, acute at the tips.

Legs short, simple, tibial spurs short, obtuse.

1. *Sciapteryx rotundus*, n. sp.

Shining black; legs white, the posterior femora and tibiæ tipped with black. Length 0.33. Br. wings 0.70 inch.

♀. Body polished, short and quite stout; antennæ short, a little longer than base of thorax, rather compressed in middle, irregular; first and second joints ovate, longer than usual, third curved, enlarging toward apex; fourth and fifth semi-ovate, contracted at base; head wide, polished, coarsely punctured near inner orbits; lower ocellus in a large heart-shaped basin; nasus emarginate, pleura coarsely punctured; abdomen very short and wide; legs white; coxæ, except at tips, a line on the first and second pair of femora above, apical half of posterior femora and of tibiæ and their apical tarsi black; inner spur of anterior tibiæ very long, bifid; inner tooth of claws large and near the tip; wings hyaline, nervures blackish; lanceolate cell with oblique cross line, remainder with two middle cells.

Farmington, Conn.

One specimen. The wings are not unusually short or stout. The second submarginal is widest at the angle receiving the first recurrent nervure, the third a little longer than the second.

46. *WALDHEIMIA*, Lepel.

Waldheimia, Lepel, MSS.

Brullé, Hym. iv, 1846, 665.

Wings—Two marginal and four submarginal cells, the second and third each with a recurrent nervure; lanceolate cell contracted; under wings with two middle cells.

Antennæ 9-jointed, somewhat thickened in middle, the middle articles longer than the others.

Type.—*Tenth. Brasiliensis*.

1. *W. Brasiliensis*.

Tenthredo Brasiliensis, Lepel, Mon. Tenth. 1823, 95, 270.

Waldheimia Brasiliensis, Brullé, Hym. iv, 665.

Brazil.

2. *W. Orbignyana*, Brullé, Hym. iv, 1846, 665, pl. 46, fig. 8, ♀.

Bolivia, S. Am. Not seen, but from the species figured by Brullé, this genus would appear to be the same with *Macrophya*.

47. *ATHALIA*, Leach.

Athalia, Leach, Zool. Misc. 1814.

Lepel, Mon. Tenth. 21.

Stephens, Brit. Ent. Mand. vii.

Brullé, Hym. iv.

Hartig, Die Blattw. 1.

Hylotoma, Spec. ***, Fab. Syst. Piez.

Tenthredo, (All) Fam. 1, Klug, &c.

Wings ample, two marginal and four submarginal cells, second and third each receiving a recurrent nervure, the second small, rather quadrate, the third rather long, lanceolate cell with oblique cross line; under wings with two middle cells.

Antennæ 10-articulate, short, a little thickened toward the end, articulations rather indistinct, third joint largest, the apical joint rather obtuse, with an obscure suture.

Head transverse, labrum generally rounded in front; mandibles bidentate; body short, acute.

Legs slender, simple, tibiæ with two acute spurs.

Larvæ with six pectoral, fourteen abdominal and two anal feet.

The larvæ of *A. spinarum* of Europe is said to be exceedingly destructive to the turnips, eating the leaves and leaving only the fibres. They come forth in a constant succession, from August till near November. They do not touch the Swedish turnips. (Curtis, viii, 617).

1. *A. proxima*.

Tenthredo (*All*) *proxima*, Klug, Berl. Mag. vii, 1814, 130, 5, ♀ ♂.

"Luteous; metathorax, wings, tibiæ and tarsi black. Length 3 lines. Br. wings 6½ lines.

Head and antennæ black; clypeus and tip yellow-white, mandibles brown, at end black; scutel yellow-red, except the hinder half, which, together with the metathorax, is black; abdomen of one color, red-yellow, ends of ovipositor sheath blackish; legs reddish-yellow, except the tibiæ and tarsi, which are black; wings almost transparent, blackish; anterior darker, nerves black.

♂. In the male the basal joints of antennæ beneath are whitish-yellow, the hinder half only of metathorax is black."

Baltimore. Not seen. This is not to be found in any collection in this country.

Wings with two marginal and four submarginal cells.

48. **SELANDRIA**, Leach.

Selandria, Leach, Zool. Misc. 1814.

Stephens, Brit. Ent. Mand. vii, 44, xvii.

Brullé, Hym. iv, 665.

Hartig, Die Blattw. 263, Sec. 1.

Tenthredo, Fam. II, Klug, Berl. Mag. vii, 1814.

Sec. ††††, Lepel, Mon. Tenth.

Wings—Two marginal, divided by a straight, oblique nervure, and four submarginal cells, first small, rounded, second and third of equal size, each with a recurrent nervure. The submarginal bullæ in all the species examined are alike. A bulla in the middle of the first cross nervure, from which a clear line joins a prolonged bulla at the first re-

current nervure, thence to one on the lower third of the second nervure, and thence to a wide bulla in the middle of the third nervure, from which two distinct lines radiate to the margin; a second line can sometimes be discerned across the lower part of the third submarginal.

Antennæ 9-articulate, the two basal joints distinct, rather globose, remainder sometimes less distinct, third often as long as both fourth and fifth, the remainder gradually diminishing in length and thickness; terminal joint short, somewhat conic. *Antennæ* seldom longer than head and thorax.

Head broad, rugose, generally polished and shining, with a suture more or less deep on each side of ocelli from the antennæ to summit, and an enclosed basin below the lower ocellus; nasus deeply notched; mandibles bidentate; joints of maxillary palpi somewhat equal in length, third joint of labial palpi short.

Body short and stout; abdomen broad, hardly longer than thorax.

Legs simple, with two short unequal spines at apex of tibiæ, the anterior pair bifid.

The larvæ are generally twenty-two-footed. They are slug-like in appearance and are often covered with a viscid slime. They are all naked, but some are covered with whorls of spines, some with whorls of fine hair, and some cover themselves with patches of white woolly matter. They generally undergo their transformations in the earth, but in some cases form a double cocoon, which remains in the ground.

Hartig has formed the genus into four sub-sections, which are given below, with the addition of another section which seems called for by a species of this country. The names which he gave to these sub-sections, founded on the form and habit of their larvæ, do not all seem to correspond with their larva characters in this country, and have not been adopted.

The species of this genus are small and are mostly of inconspicuous colors, and in many cases are so much alike that it is difficult to distinguish them. Fortunately they seem to vary little from their types.

Table to assist in finding the Species.

Section I. Lanceolate cell petiolate.

Tribe 1. Under wings without middle cell.

Color black, shoulders and back red, inner claw tooth

large.....1, *vitis*.

Color black, shoulders and back red, inner claw tooth

minute.....2, *inhabilis*.

Color rufous, head and pleura black.....3, *capitalis*.

the fourth joint, enlarged in middle, third and fourth joints largest toward apex, at apex cup-shaped, apical joint short; each of the three ocelli in a large, shallow, separate, pentangular basin, extending from the upper ocelli toward the eyes; nasus hardly emarginate, mandibles stout, second tooth prominent, with several projections beneath; nasus and labrum white; prothorax, mesothorax and tegulæ rufous; the four anterior legs pale beneath, with more or less of black above; posterior coxæ and femora somewhat pale beneath; inner claw tooth large and near the tip; upper wings clouded, marginal dividing nervure received in middle of third submarginal cell, which also receives the second recurrent nervure near its base; under wings appendiculate, or with the outer submarginal partially closed at margin.

Var. The depressions about the ocelli indistinct; a deep mitre-shaped sinus above the antennæ; most of scutel rufous.

Mass., Conn. U. S., (Say).

The larvæ are 22-footed; skin smooth, body somewhat enlarged in middle and slender toward the tail. While growing, their color is light green above, with two transverse rows of black thorn-like points, alternately six and four in number across each ring, body yellow back of the head, beneath, and the third segment from the tail, with head and tip of tail, black. They live upon vine-leaves and are very destructive, feeding in companies, often of 20 or 30, on the lower side of the leaf, and eating it all as they go, from the edge inward. They undergo their transformation in the ground.

Two broods appear in a season. The young of the second brood remain beneath the ground during the winter.

These insects are very destructive to the vines, often completely stripping them of their leaves. I first saw them about ten years ago on vines about five miles from my home, but my own vines have never been attacked until this year, 1867, when the larvæ appeared in great numbers August 6th. I bred from one of the pupæ, Sept 23d, the *Bassus linutaris*, Say, ♀.

I have retained the name of *S. vitis*, because it seems more appropriate to the insect, although the name given by Say has the priority.

2. *S. inhabilis*.

Selandria inhabilis, Harris' MSS.

Norton, Bost. Proc. viii, 1861, 220, 2, ♀.

Shining black, anterior half of thorax rufous. Length 0.16. Br. wings 0.40 inch.

♀. Black; antennæ short, filiform, second joint half as long as first, apical joint short; face below the ocelli roughened and dull; labrum

dull white at tip; the tegulæ, prothorax, mesothorax and forward half of pleura rufous; abdomen short, nearly as wide as long; tips of femora and the tibiæ pale, with more or less black upon the tips of tibiæ; wings ample, fuliginous; marginal nervure somewhat bent and received near the third submarginal nervure.

♂. A male has the medial and posterior tibiæ black.

Var! ♂. The prothorax, mesothorax and scutellum rufous. Anterior femora and tibiæ reddish; inner claw tooth large; wings obscure, darkest at base; under wings with all the outer cells wholly closed, the outer nervure not touching the margin. (Mexico, 1 ♂, Coll. of H. de Saussure).

Massachusetts.

3. *Selandria capitalis*, n. sp.

Color yellow-red, the head and pleura black. Length 0.14. Br. wings 0.36 inch.

♀. Shining yellowish-red; antennæ moderate, first joint but little longer than second, third but little longer than fourth, the whole filiform, of equal size to apex, pubescent; the two basal joints white, remainder blackish; head polished; a lunate series behind ocelli and a mitre-shaped basin below; nasus hardly incurved; labrum reddish; the pleura, the breast between first and second pair of legs and the apex of venter black; legs white, inner claw tooth removed from tip. Wings hyaline, nervures brownish; marginal dividing nervure curved and received beyond the middle of cell; first submarginal almost square, third narrowed at base and widened at apex.

Brooklyn, N. Y., (J. Akhurst). One ♀.

In the form of the antennæ this differs much from the type species.

Tribe 2. (*Monophadnus*), Hartig.

Under wings with one middle cell.

Sub-Tribe A. (*Monophadnus*), Hartig.

Antennæ filiform, short.

4. *S. barda*.

Allantus barda, Say, Bost. Jour. i, 1835, 218, 7, ♀.

Selandria barda, Norton, Bost. Proc. viii, 220, 3.

Proc. Ent. Soc. Phil. iii, 9, 14, ♂.

Cresson, Proc. Ent. Soc. Phil. iv, 224.

Black; thorax and anterior upper angle of the pleura rufous. Length 0.28. Br. wings 0.64 inch.

“♀. Body short, dilated, black; antennæ, the second joint nearly as long as the first, but less dilated; front and vertex with impressed lines; nasus not deeply emarginate, labrum rounded before, mandibles piceous at tip, thorax and humeral portion of the pleura honey-yellow; wings tinged with blackish-purple.”

Indiana, (Say).

The antennæ are stout, filiform, largest in middle, third joint much larger than fourth. The extent of rufous on the thorax is quite variable, sometimes covering mesothorax and half or the whole of scutellum, and sometimes only a spot on each lobe; in all cases the prothorax and the anterior half of pleura are rufous; the legs are black and the anterior femora and tibiæ before rufous. The upper wings are violaceous at base, clearer toward apex; lower wings faintly clouded if at all. The claws have a very minute, obtuse inner tooth, distant from the tip. Massachusetts, Pennsylvania, Colorado.

5. *S. dubia*.

Selandria dubia, Cresson, Proc. Ent. Soc. Phil. iv, 1865, 244.

"Black; most of thorax yellowish-rufous; wings fuliginous, apical third and posterior pair smoky hyaline. Length $3\frac{3}{4}$ lines. Exp. wings 9 lines.

"♀. Shining black, robust; head with scattered punctures, the labrum and base of mandibles clothed with pale pubescence; antennæ about as long as the head and mesothorax together, stout, first joint subglobose, second a little shorter than the first, third half as long again as the first and second together, remaining joints subequal, subserrate beneath, the terminal joint the shortest. Thorax rufo-ferruginous, polished; pleura protuberant, the posterior portion on the sides and beneath black; metathorax black; tegulæ rufo-ferruginous; wings ample, smoky hyaline, faintly iridescent; the basal two-thirds of the anterior pair fuliginous, darker at base; nervures and stigma black; anal angle of the posterior wings pure hyaline, beautifully iridescent; the left wing with one middle cell, but none on the right wing, the outer nervure being entirely obliterated. Legs entirely black, slightly sericeous. Abdomen short, almost as broad as long, depressed, entirely shining black, the extreme apex fringed with pale pubescence."

Colorado. One ♀.

This seems to be a variety of *S. barda*, Say, from which it differs very little, except that it is larger. The inner claw tooth is very minute as in that.

6. *Selandria mexicana*, n. sp.

Black; the tegulæ, prothorax and mesothorax yellow-red; apex of coxæ and trochanters white, wings subviolaceous. Length 0.25. Br. wings 0.56 inch.

♀. Body stout. Antennæ as in *S. barda*; head wide and not thick, polished; nasus rounded before, with a small notch in the middle, edge of nasus and labrum whitish; tegulæ, prothorax, mesothorax and scutellum testaceous; emargination below basal plates large; legs black, the apex of all the coxæ, the trochanters and base of femora,

the anterior femora and tibiæ before, and two-thirds of the posterior femora below, white; basal joint of hinder tarsi nearly as long as all the rest together; inner tooth of claw rather larger than outer and very near to it. Wings violaceous sub-obscure, color equally distributed; first submarginal nearly round, outer under-wing cells open, the marginal cell with a short appendiculate nervure.

Tampico, Mexico, (H. de Saussure). One ♀.

Much like *S. barda* in appearance.

7. *S. marginicollis*.

Allantus marginicollis, Harris' Cat.

Selandria marginicollis, Norton, Bost. Proc. viii, 1861, 220, 4, ♀.

Dull ochre-yellow; head, spots on thorax, pleura and second segment of tergum black. Length 0.20. Br. wings 0.52 inch.

♀. Body stout; antennæ black, rather slender; head black, nasus and labrum pale; front of prothorax, middle of mesothorax, the metathorax, first segment of tergum and the pectus black; collar, tegulæ and legs paler than the rest of body; wings hyaline, stigma and costa pale; marginal cross nervure received in middle of third submarginal cell.

Mass., (Harris' Coll.) Albany, N. Y., Dr. Peck. (2 ♀.)

8. *Selandria ochra*, n. sp.

Testaceous; head and legs below the knees black, wings obscure. Length 0.25. Br. wings 0.56 inch.

♂. Body stout, abdomen wide; antennæ black, densely pilose; head black, nasus and mouth below, white; mandibles each with one strong inner tooth; body all of one color, paler beneath; legs pale, all the tibiæ and tarsi (except the anterior pair, which are pale before,) black; inner claw tooth as large as outer and very near it; wings blackish obscure, darkest at base, nervures and stigma black; first submarginal cell pyriform, angulate at base; marginal under-wing cells with an appendiculate nervure.

Cordova, Mexico, (H. de Saussure). One ♂.

9. *S. rubi*.

S. (Hoplocampa) rubi, Harris, Address of N. Darling, New Haven, 1845, 13.

N. E. Farmer I. 164, II, p. 33.

Proc. Bost. Soc. vii, 235.

Norton, Proc. Bost. Soc. viii, 221, 5, ♀.

"Black; a spot on each side of the collar, middle of the dorsum and legs dirty yellow, wings smoky." Length 0.28. Br. wings 0.56 inch.

♀. Color black; head rather rugose, nasus somewhat incurved; head pubescent, except about ocelli; mandibles with two stout inner teeth; tegulæ, most of anterior angle, the third, fourth, fifth and part of sixth segments of tergum yellowish-white, venter ferruginous; legs

paler, their coxæ and the basal half of femora and tips of posterior tibiæ blackish; inner claw tooth large. Wings smoky hyaline, nervures brownish; marginal cross nervure curved and received near apex of third cell.

Conn., Mass., Ohio.

Larvæ green, not viscid; six dorsal rows of tubercles having two black bristles and four lateral ones on each side bearing white bristles.

They appear in May and feed on the raspberry. In 1862 I received from Mr. Arthur Robinson, of New Haven, specimens of these larvæ, with leaves, from which they had eaten irregular holes in the middle and on the edges. Mr. J. Kirkpatrick, (*Ohio Farmer*, June 16th, 1860,) mentions a larva which "eats longitudinal blotches out of the leaves of the raspberry and seems to be partly gregarious," which is probably this. The larvæ feed at night or early in the morning, and conceal themselves during the day, and are, therefore, very difficult to find.

10. *S. medius*.

Selandria medius, Norton, Proc. Ent. Soc. Phil., iii, 1864, 9, 15, ♀ ♂.

Black; with white tegulæ, collar and legs. Length 0.20. Br. wings 0.45 inch.

♀. Short and stout, color shining black; antennæ as in *S. tilix*, (No. 11). Sutures at sides of sides of ocelli not extending to summit, lower ocellus in an oval basin; tegulæ and most part of anterior angle white; legs below trochanters reddish-white, base of femora darker; wings hyaline, marginal cross nervure curved, received near middle of third submarginal cell; second recurrent nervure almost coinciding with the junction of the second and third cells; first submarginal oval.

♂. Antennæ more compressed, more of black on the base of femora; second recurrent nervure received nearer to middle of cell.

New Jersey, (Coll. Am. Ent. Soc.).

Two specimens. It resembles *S. flavipes*.

11. *S. tilix*.

Selandria tilix, Norton, Bost. Proc. viii, 221, 6, ♀.

Shining black; apex of femora and legs below, white. Length 0.24. Br. wings 0.56 inch.

♀. Body stout, black, polished; antennæ enlarged in middle; three large shallow depressions radiating from ocelli as in *S. vitis*; a deep sinus above the space between antennæ; nasus slightly incurved; inner tooth of mandibles retracted, a smaller blunt tooth behind; the whole face black; legs black above the apex of the femora, remainder white, tips of the posterior tibiæ and the tarsi fuscous; claws very short and sharp, no inner tooth perceptible; wings hyaline, faintly

clouded at base of upper pair; marginal cross nervure straight, received between the middle and apex of cell; a faint dot in middle of first brachial as well as in the second submarginal cell.

♂. Resembles female, except the tegulæ and edge of collar are whitish.

Farmington, Conn., Canada, Illinois. (41 ♀, 2 ♂).

Taken in June for several years, on the Linden (*Tilia americana*). Larvæ not known, but I have often noticed the leaves eaten with irregular holes, as in the case of *S. rubi*. Doubtless, like it, they feed in the night or early morning only.

Sub-Tribe B. (*Phymatocera*), Dahlb.

Antennæ bristle-shaped, long.

12. *S. rudis*.

Selandria rudis, Norton, Bost. Proc. viii, 221, 7, ♀.

Black; thorax mostly rufous. Length 0.20. Br. wings 0.44 inch.

♀. Body short. Antennæ longer than to base of thorax, slender, ends of joints not enlarged, third joint hardly longer than fourth; the first and second joints, nasus and labrum pale rufous; head apparently striate and finely and sparsely punctured; a wide channel on each side of ocelli from summit to mouth, and a shallow shield-like basin below ocelli; edge of nasus straight; tegulæ, prothorax, mesothorax and the anterior half of pleura orange-red; legs black, tips of the femora, the anterior tibiæ beneath, and the tips of tarsi pale rufous; tibiæ and tarsi fuscous, pilose; claws with no perceptible inner tooth. Wings hyaline; marginal cross nervure curved, and received at junction of third and fourth submarginal, second submarginal but little longer than first; third cell nearly twice as long.

♂. The male has more of white upon the four anterior legs.

Maine, Conn., N. Y.

In one specimen the marginal nervure is received within the third submarginal cell.

13. *S. rufula*.

Selandria rufula, Norton, Bost. Proc. viii, 1861, 221, 8, ♂.

Black; tegulæ and edge of collar reddish-yellow. Length 0.18. Br. wings 0.40 inch.

♂. Not very stout. Antennæ nearly as long as body, second joint half as long as first, third joint compressed, third, fourth and fifth equal length, remainder nearly as long, apical joint as long as preceding; head polished, nasus slightly incurved, and with the labrum, tegulæ, and edge of collar dull honey-yellow; legs black, tips of the four anterior femora and their tibiæ whitish; wings hyaline; marginal nervure

curved, received between middle and apex of third submarginal, second submarginal twice as long as first.

Farmington, Conn. One ♂.

14. *S. fumipennis*.

Selandria fumipennis, Norton, Bost. Proc. viii, 1861, 222, 9. ♀ ♂.

Black, with long subviolaceous wings. Length 0.24—0.28. Br. wings 0.56—0.68 inch.

♀ ♂. Shining black; abdomen of ♀ much compressed, at the apex acute; antennæ nearly as long as body, somewhat resembling those of *Cladius*, all the joints of nearly equal length, suddenly enlarged at tips and contracted at base and flattened; labrum slightly incurved, mandibles large, the second tooth widely separated from the first; legs black; anterior tibiæ faintly whitish; inner tooth of claw large; wings very long, subopaque, violaceous, color equally distributed, nerves and stigma black.

Farmington, Conn.

15. *Selandria nubilipennis*, n. sp.

Black, a pale stripe down the anterior legs; wings violaceous, subhyaline at apex. Length 0.22—0.24. Br. wings 0.44—0.50 inch.

♀. Body not so stout as *S. fumipennis*, abdomen flattened. Antennæ not two-thirds the length of body, third joint longer than fourth, apical joint as long as preceding, nasus hardly incurved; palpi black; legs black; anterior legs before and all the knees whitish; claws with no perceptible inner tooth; wings subviolaceous, growing clearer toward apex.

♂. The male has the flagellum in some lights piceous; the four anterior legs and posterior femora at tip ferruginous.

Maine, (A. S. Packard.) Mass., (Coll. Am. Ent. Soc.) Two ♀, one ♂.

This appears much like *S. fumipennis*, but the wings are not so obscure, the antennæ are shorter, the body smaller and the claws simple.

Section 2. (*Hoplocampa*), Hartig.

Lanceolate cell contracted in the middle. Antennæ short, the third joint hardly longer than the fourth and the end joint frequently thickened. Under wings with two middle cells.

16. *S. halcyon*.

Selandria halcyon, Harris' Cat.

Norton, Bost. Proc. viii, 1861, 222, 10, ♀ ♂.

Ochre-yellow; a large black spot on tergum. Length 0.16—0.18. Br. wings 0.48—0.54 inch.

♀ ♂. Short, moderately stout, abdomen acute, color ochre-yellow; antennæ, third joint longer than fourth, apical joint a little longer than the preceding, obtuse and as thick as the other joints, color pale, the joints tipped with black above, apex black, nasus not emarginate; man-

dibles slender, second tooth retracted, with a smaller tooth below; a small spot about the ocelli, the metathorax and a large spot upon the tergum, black; (the male has all the thorax above and all the tergum, except the apex, blackish); legs of one color, the posterior tibiæ and tarsi fuscous; inner tooth of claw minute, rather sharp, near middle of claw. Wings hyaline, stigma and costa pale; marginal cross nervure straight, second recurrent nervure received between the middle and base of third submarginal cell.

Var. Color almost entirely ochraceous. (Mass.)

Maine, Mass., Md., Satkatchewan, (Smiths. Inst.)

Taken in April for successive years in Baltimore, by Mr. Uhler, on *Amelanchier canadensis*. The antennæ are much like those of *Athalia*.

17. *S. montana*.

Selandria montana, Cresson, Proc. Ent. Soc. Phil. iv, 244, 3, ♀.

"Whitish; vertex and mesothorax brownish; antennæ piceous, dorsal surface of abdomen shining black; wings tinged with yellowish fuscous; legs pale blackish at tips. Length $3\frac{1}{2}$ lines. Br. wings $7\frac{1}{2}$ lines.

♀. Head whitish, finely pubescent; the vertex, occiput and stains on the cheeks pale brownish; tips of mandibles piceous; antennæ short, piceous, proportions as in *S. dubia*. Thorax whitish, minutely punctured, finely pubescent; mesothorax, scutellum, part of metathorax, a stain on each side of the pleura beneath and another just beneath the wings, brown; tegulæ whitish. Wings ample, subhyaline, iridescent, the anterior pair uniformly tinged with pale yellowish fuscous, the posterior pair hyaline, faintly dusky at tips; nervures fuscous, the costal nervure, except the outer margins, the stigma, except a spot in its middle, and the nervures at the base of the wings, pale; posterior wings with two middle cells. Legs whitish, their femora tinged with fulvous; the four anterior tibiæ behind (slightly interrupted in the middle), base and apex of the posterior tibiæ within and most of the tarsi blackish. Abdomen shining black above; the extreme sides, apex and the venter entirely whitish."

Colorado. One ♀. (Coll. Am. Ent. Soc.).

The breast is white. The apical joint of the antennæ is more slender than the preceding, the three apical joints of palpi clavate, the final joint the longest, the inner tooth of claw large and very near the tip.

Section 3.

Lanceolate cell with straight cross line as in *Tenthredo*. Antennæ short, filiform, subserrate beneath.

18. *Selandria nova*, n. sp.

Shining black; tegulæ and legs, in part, white, wings faintly clouded, very long. Length 0.16. Br. wings 0.48 inch.

♀. Body short; antennæ moderate, filiform to tip, subserrate beneath, apical joint as long or longer than the preceding, obtuse, somewhat clavate; sutures at sides of ocelli wide and large, basin of lower ocellus small; legs black; apex of femora and all the tibiæ reddish-white, blacker toward tips of tibiæ, tarsi fuscous; claws without inner tooth. Wings very long, hyaline, faintly dusky toward base, nervures blackish; first submarginal larger than usual, not rounded behind and with a sharp angle on its lower side, near the costa, marginal cross nervure bent.

Maine. One ♀. (A. S. Packard).

Section 4. (*Eriocampa*), Hartig.

Lanceolate cell with oblique cross line, antennæ enlarged in middle.

Tribe 1.

Under wings without middle cell.

19. *Selandria obsoletum*, n. sp.

Black; the four anterior legs below the knees pale, wings hyaline. Length 0.20. Br. wings 0.44 inch.

♀. Short and stout; antennæ, the first and second joints nearly equal, third one-half longer than fourth. Head polished; an oval basin below lower ocellus, ending in a sinus, on each side of which is a separated pit; body wholly black; legs black, below the knee joints white; the lower half of posterior tibiæ and their tarsi blackish, tips of medial tibiæ brown; claws short and sharp, their inner tooth near the base, difficult to see. Wings hyaline, faintly clouded in middle, cross nervure as in *S. rosæ*; first submarginal rounded at base, cross nervure in some cases apparently obsolete, (but a faint, clear whitish line can in some lights be discovered in both sexes).

Mass., (Harris' Coll.) (Coll. Am. Ent. Soc.) Three ♀, one ♂.

Tribe 2. Hartig.

Under wings with two middle cells.

20. *S. cerasi*.

Selandria cerasi, Peck, Nat. Hist. Slug worm, 1799.

Harris, Inj. Ins. 419.

Norton, Bost. Proc. viii, 222. 11, ♀.

Winchell, Bost. Proc. ix, 321.

Black; legs below knee joints white, a clouded spot in middle of wings. Length 0.20. Br. wings 0.44 inch.

♀. Body very short and stout; antennæ, third joint nearly as long as fourth and fifth, the joints beyond rapidly decreasing in size and

length, apical joint slender and pointed; head polished; lower ocellus in an ovate basin, with a sinus beneath; mandibles stout, second tooth nearly as long as first, with three irregularities beneath; body wholly black; tips of the four anterior femora, with the tibiæ and tarsi more or less dull white; claws short and sharp, with no inner tooth near the tip. Wings hyaline, a large clouded spot below stigma; marginal dividing nervure oblique, almost touching the third submarginal nervure.

New England, Pennsylvania, Michigan.

The larva is twenty-footed, is larger before than behind, and is covered with an olive-colored, sticky slime (like a slug.) There are two broods, in June, July and in September, of which the first is the most numerous and destructive. Prof. Peck, in a paper published in Boston, by the Mass. Ag. Soc. 1799, makes the following statements with regard to it: On the 6th of June he saw a female depositing an egg under the "upper membrane of a cherry leaf, but on the under side of the leaf," first making a circular incision about half a line in diameter, then withdrawing the ovipositor a little and forcing an egg into the aperture. It was first a long oval, and from day to day became more spherical in shape. On the tenth day the eyes of the larva became visible through the membranes of the leaf and egg, and on the fourteenth day the larva came forth and began to feed. On first quitting the egg the larva is nearly white, the head brown and large. In the course of twenty days it throws off four skins, each of which it generally eats at once; it remains in the fifth viscous skin six days and acquires its full growth, and then quits the skin, leaving it adhering to the leaf, and appears in a clear yellow skin, not viscous. Soon after, it descends to the earth, which it penetrates to the depth of from one to four inches, forming little cells of hardened earth, smooth within. On the 12th of July he collected about 170 of these larvæ in the mature state and placed them in a vessel filled with light earth, from which they began to rise in the imago state in eighteen days, but continued to appear for some time, and some remained in the pupa state until the following spring. The second brood of larvæ appeared in August, and individuals came forth as late as September and October, but not in so great numbers as in the first brood. Of these he collected about 190, which remained in the pupa case during the winter, but did not change from the larva into the pupa state until May. On the 21st of May they began to appear in the imago state and lay their eggs, but did not all come forth at once, many being several weeks later. The larva when of full size is about 0.45 inch in length. It feeds up-

on the upper side of the leaves of the cherry (both wild and cultivated) and the pear, eating only the epidermis, never eating through the leaf, and leaving the veins and skeleton. Generally but two or three are found upon a leaf, but when they are in great numbers there are sometimes twenty or thirty. In such cases when they are very numerous a disagreeable odor is given forth. At times they have been very destructive to these fruit trees. Dr. Harris asserts and confirms these statements, with additional remarks. Prof. Peck has illustrated his remarks by a series of careful drawings, which proves his insect to be the same which is found here now.

Prof. Winchell has also published some interesting observations on the same insect, which cannot here be copied for want of space. He states that the incisions are straight and not semicircular, are made and the ova deposited on the upper side of the leaf, the ovipositor going entirely through the leaf, and that the larva appears on the eighth or ninth day. It was very abundant, and in some instances attacked not only the cherry and pear but the mountain ash and plum.

21. *S. fasciatus*.

Selandria fasciatus, Norton, Proc. Ent. Soc. Phil. iii, 1864, 9, 16, ♀.

Black; legs below the knees, except the hinder tibiæ, white, basal half of inner wings blackish. Length 0.20. Br. wings 0.50 inch.

♀. Color shining black, third joint of antennæ nearly as long as fourth and fifth; head polished, lower ocellus in a heart-shaped basin; a sinus beneath, with another on each side; legs black, their tibiæ and tarsi, except the tips of apical joints, pure white; the apex of posterior tibiæ black; inner claw tooth obtuse, of moderate size near the base; wings ample, their basal half two-thirds blackish, their apical third hyaline; marginal dividing nervure received at intersection of third and fourth cells.

♂. The male has no inner under-wing cells. (Illinois).

Massachusetts, Illinois. Two ♀, three ♂.

Tribe 3. Hartig.

Under wings with one middle cell.

22. *S. rosæ*.

Selandria rosæ, Harris' Cat. 1835, and Inj. Ins. 416, ♀ ♂.

Norton, Bost. Proc. viii, 223, 13.

Black; legs below the knees, in part, white, wings tinged with blackish violaceous, darkest at base. Length 0.20. Br. wings 0.44 inch.

♀ ♂. Body stout, shining black; antennæ short, filiform, third joint one-half longer than fourth, fourth longer than fifth, apical joint shorter than the one preceding and more slender; channels on each side of ocelli, wide, shallow, irregular, and not extending to edge of

occiput; inner tooth of mandibles retracted, no irregularities below; tips of mandibles red; body wholly black; legs black, the two anterior pair dull white below the knee joints, with fuscous tarsi; the middle tibiæ are sometimes black on the upper side, and the posterior tibiæ whitish at base and tip, remainder with the tarsi blackish; claws with a moderately large inner tooth near the base. Wings tinged with blackish violaceous, darkest toward the base; under wings sometimes hyaline; marginal cross nervure straight and received in middle of third submarginal cell.

Northern States.

Larvæ 22-footed, slug-like, not slimy, not enlarged toward the head, although they have the power of retracting the head partly within or beneath the following segments. Color pale green, beneath yellowish; head yellowish, with a black dot or "triple-pointed wart" on each side. To the eye it appears soft and velvety, but free from hairs. It has two broods, coming forth in June and August, and feeds on the leaves of the rose, on the epidemis of the upper side of the leaf, not eating the vines or the under skin. There are seldom more than two or three on a leaf. Their transformations are much like those of *S. cerasi*. When disturbed the imagos often sluggishly drop from the leaf of the bush upon the ground. They are most active in the morning and evening. When the larva is mature it passes into the ground and forms an oval cell below the surface, smoothed within and cemented by gummy silk. The second brood is not so numerous as the first.

This is the most destructive insect of this genus, as it infests the rose bushes, and in their most beautiful season, causes the rose leaves of whole gardens to look as if burned by fire. And as the life of the leaf is not wholly destroyed, the effect is perceived for a long time after the damage is done. It continues to remain for years about the same locality.

23. *Selandria ignotus*, n. sp.

Black, with the tegulæ, collar, the four anterior tibiæ and base of posterior tibiæ white. Length 0.20. Br. wings 0.44 inch.

♀. Body stout, shining; antennæ as in *S. rosæ*; head below the occiput dull, with close punctures; nasus irregularly notched; tegulæ, edge of collar, all the knee joints, the four anterior tibiæ, base of posterior tibiæ and of 1st joint of tarsi whitish, remainder of legs black; tarsi obscure; inner tooth of claws minute, below the middle; wings slightly clouded, dividing marginal nervure received between middle and apex of third submarginal; second recurrent nervure received between middle and base of the same cell; base of first submarginal not

rounded, but protracted to a sharp angle as in *Emphytus*. One specimen has bands on the abdomen as in *E. maculatus*.

Maine, (A. S. Packard.) Illinois, (Coll. Am. Ent. Soc.). Conn.

A specimen from Illinois has the anterior tibiæ fuscous and the first submarginal obsolete.

24. *Selandria quercus alba*, n. sp.

Black, with the four anterior legs pure white below the middle of femora, and a white band on posterior tibiæ. Length 0.20. Br. wings 0.40 inch.

♂ ♀. Shining black, short and compressed; antennæ slightly enlarged in middle, third joint nearly as long as fourth and fifth; head polished; lower ocellus in an oval basin, with three pits beneath; body wholly black; legs black, the two anterior pair clear white below the middle of femora; tips of their tibiæ waxen; the basal two-thirds of posterior tibiæ and of first tarsal joint white; tarsi fuscous, apical joint of all the tarsi waxen-white; inner tooth of claws minute, beneath the middle. Wings hyaline, iridescent, nervures blackish, first submarginal cell rounded at base.

Farmington, Conn.

This appears much like *S. rosæ*, but the wings of this are clear and the hinder tibiæ have a distinct white band.

The larvæ feed on our white oak. I find them in abundance upon some English oaks, (*Quercus robur*). They are naked, slimy slugs, like those of *S. cerasi*, 22-footed; color pale green, at times almost white, enlarged near head. Head white, the six anterior legs amethystine brown, tail segment constricted, rather sharp. They feed in companies when young, sometimes twelve on a leaf, head outward, devouring the epidermis of the under side of the leaf, and not eating holes through. The eggs are not laid in the ribs of the leaf, but in the smooth surface between the upper and lower skin near the tip of the leaf, where whitish, irregular blotches are soon formed, visible only beneath, from the centre of which the larva comes forth. I have bred many specimens, coming forth in twelve or fourteen days.

Section 5.—(*Selandria*), Hartig.

Lanceolate cell open at the shoulder, without cross line; under wings with two middle cells.

25. *S. flavipes*.

Selandria flavipes, Norton, Bost. Proc. viii, 1861, 222, 12, ♀ ♂.

Black, with the tegulæ, collar and legs yellow-white. Length 0.22. Br. wings 0.46 inch.

♀ ♂. Shining black; antennæ somewhat enlarged in middle, third joint longest, remaining decreasing rapidly in size and length; apical joint pointed, color toward apex pale; head polished, with three de-

pressions about ocelli as in *S. vitis*, the lower one very distinct; between this and antennæ is a deep, recurved cross channel almost extending to eyes; nasus wide, its edge straight, tips of mandibles sharp, its inner tooth retracted; tegulæ, collar and legs straw-yellow; inner claw tooth small, near the base; abdomen compressed; wings faintly clouded, marginal cross nervure curved, and touching the third submarginal beyond the middle; first submarginal rounded at base.

Connecticut, New York, New Jersey.

Common. By an error this was originally placed in Tribe 2 of Section 3.

26. *Selandria ruficollis*, n. sp.

Black; the tegulæ, prothorax and mesothorax rufous; wings fuliginous. Length 0.24—0.28. Br. wings 0.50—0.56 inch.

♂. Not very stout, compressed, apex of abdomen rounded; first and second joint of antennæ cup-shaped, remainder enlarged in middle; the third joint long; head polished, lower ocellus in a basin; nasus hardly emarginate; mouth black, palpi piceous; tegulæ, prothorax, mesothorax and scutellum rufous, the lower half of prothorax black; legs black, the anterior femora and tibiæ yellow; base of femora and apex of tibiæ black; apical half of medial femora and tibiæ obscure reddish. Wings blackish subhyaline.

Var. Venter at base pale, legs black, trochanters pale, base of first joint of tarsi white.

Mexico. (2 ♂.) Saussure.

Species not known.

27. *S. obtusa*.

Tenthredo (All) obtusa, Klug, Berl. Mag. viii, 1814, 55, 20, Tr. II, A. †.

"Body black fuscous; clypeus, collar, base of abdomen, legs before, and posterior tibiæ testaceous, wings hyaline, stigma yellowish. Length 4 lines. Exp. wings $8\frac{1}{2}$ lines.

The abdomen thickens itself obtusely. Antennæ of equal thickness throughout. The anterior part of body is light pubescent whitish; mandibles black, inner part of mouth yellowish. The back plates of metathorax are white; upon the abdomen the first and second segments are dirty white-yellow, the portions of the anus beneath are of the same color; on the middle legs the under side of the shanks are brownish; on the under legs the shanks, spurs of tibiæ and tarsi are blackish; wings hyaline, with brown nerves, yellow costa and reddish outer nerves; the second submarginal receives two recurrent nerves, of which the second enters close to the third, wing scales yellow."

Georgia.

This may belong to one of the sections of *Dineura*, although in Klug's paper it is associated with *Selandria*.

28. *S. labiata*.

Tenthredo (*All*) *labiata*, Klug, Berl. Mag. viii, 1814, 56. Tribe II, A. †.

"Antennæ the length of thorax; body elongate, black; abdomen pubescent at apex, collar on each side, with the wing scales, pale; labrum and legs testaceous, wings hyaline. Length 3 lines. Exp. 6 lines.

Mandibles brown, at tip black, the labrum fringed with fine hair, the back plates like the wing scale, white; the segments of abdomen shining on hinder edge, pitchy. On each side of the spurs projects backward pale spiny hair; the hinder portion of the anterior legs fades into white; in the middle the color is rather dirty red-yellow. The hinder coxæ are at the base yellowish. The wing-nerves and costa dark brown-black.

Georgia. Not seen.

This is also placed by Klug in his Fam. 2. (Antennæ 9-jointed.)
Sec. 1. Wings with two marginal and four submarginal cells. Div. A.
Body oval. †. Antennæ filiform.

49. *ALLANTUS*, Panz. (as restricted by Hartig.)

Allantus, Panz.

Jurine, Nov. meth. 1807, 52.

Allantus, Leach.

Stephens, Brit. Ent. Mand. vii.

Hartig, Die Blattw. 285,

Wings—Two marginal and four submarginal cells, the second and third each receiving a recurrent nervure. *Lanceolate cell always with a straight cross line*; bullæ as in *Selandria*, that on the third transverse nervure wide and often indistinct, but most distinct at the ends; under wings with two inner cells.

Antennæ (with one exception) 9-articulate, scarcely longer than the thorax, mostly thickened toward the end, with stout basal joints, third joint longer than fourth.

Body cylindrical, clypeus hardly emarginate, labrum rounded, mandibles with obtuse teeth.

Legs simple; *coxæ reaching as far as the edge of the third abdominal segment*; anterior inner spur bifid, inner claw tooth large.

Larva twenty-two-footed, solitary, and feeds upon the leaves of various plants. It is generally found rolled up in a spiral form. It performs its transformations in the earth. July and August.

Leach divided the genus *Tenthredo* into two Sections. *Allantus*: Antennæ generally somewhat clavate, third joint longer than fourth; and *Tenthredo*: Antennæ slender, third and fourth joints equal. The

arrangement of Hartig is here followed, although the divisions cannot be considered more than sub-genera.

Division 1. Antennæ 8-jointed! clavate.

1. *Allantus originalis*, n. sp.

Black; the mouth, collar, scutel, basal plates, and band on each segment of abdomen yellow; wings hyaline. Length 0.50. Br. wings 1.00 inch.

♀. Body long, abdomen somewhat compressed; antennæ short, 8-jointed, clavate, first joint large, more than twice as long as second, third nearly as long as fourth and fifth together, apical joint rather obtuse, rounded; color black, with a pale spot on the outside of basal joint; head and thorax dull, with coarse pits; nasus incurved, produced, labrum rather pointed; the apical joint of palpi shorter than either of the two preceding; nasus and mouth beneath, pale; tegulæ piceous; a broad band on collar, scutel, (scutel rather prominent), basal plates, an interrupted band on the apical edge of second and third and a band on remaining segments of abdomen dull yellow, inclining to piceous on the venter; a yellow spot above hinder coxæ; legs black, trochanters black, the anterior femora before, and all their tibiæ and tarsi, the medial knee joints, tibiæ (their tips blackish) and tarsi, (apical joints black), posterior knee joints, tibiæ (their apex and apex of tarsi black) and tarsi yellowish. Wings smoky hyaline, stigma and costa ferruginous, nervures yellowish.

Carabou Island, Sts. of Belle Isle, Labrador, (A. S. Packard, Jr.)

One specimen. It somewhat resembles *All. arcuatus*, of Europe, but the head is smaller and the abdomen longer. The antennæ are more clavate than any North American species yet seen. In other respects it resembles *Allantus*.

Division 2. Antennæ 9-jointed; not clavate.

2. *A. basilaris*.

Tenthredo basilaris, Say, Long's Second Exp. II, 1824, 316, ♀ ♂.

Allantus coronatus, Harris' Cat. ♂.

Allantus basilaris, Norton, Bost. Jour. vii, 1860, 240, 9.

Proc. Ent. Soc. Phil. iii, 10, 18, Var. ♂.

Black; the basal joint of antennæ, face below, cheeks, tegulæ, collar, scutel, basal plates, spots on pleura, and fasciæ on the five apical segments of abdomen of ♀ straw-yellow; abdomen of ♂ wholly pale. Length 0.44—0.48. Br. wings 0.80—0.86 inch.

♀. Abdomen long, cylindrical; antennæ short, stoutest in middle, apical joint pointed, basal joint more than twice as long as the next, third long, basal joint pale; head wide as thorax, polished, having very shallow punctures, deeply channeled on each side of ocelli, with a cross channel behind; lower ocellus in a basin, which extends down between

antennæ; nasus deeply notched, labrum rounded before; a dot above each eye within, a spot on cheeks, mouth below antennæ, tegulæ, and an angle before, scutel, basal plates, a triangular spot on pleura, and a smaller spot above hinder coxæ, the fourth, an interrupted band on the fifth, the band on the sixth and seventh segments and the apex of tergum straw-yellow, the band on the fourth segment encircling the abdomen; legs yellowish, the coxæ, except at tips, a line on the apex of medial femora above, the apical half of posterior femora and apex of their tibiæ blackish, their tarsi fuscous; inner spur of anterior tibiæ bifid, inner tooth of claws large and near the tip. Wings smoky yellowish, transparent, apical half darkest, stigma and costa yellowish.

♂. The male has the abdomen shorter, more slender; the cheeks, pleura and abdomen beyond middle of first segment straw-yellow; legs yellow, except a spot on posterior coxæ, a line down the four posterior femora and tibiæ and the hinder tarsi black.

Var. *a.* ♂. Resembles the female, except that only the second, third and fourth segments of abdomen are yellow, the remainder black; the posterior tarsi are pale beneath.

New England, N. Y., Pa., Ill., N. W. Ter.

The bands upon the abdomen, especially that on the fourth segment, have a rufous tinge, but are not distinctly red as described by Say.

3. *A. dubius*.

Allantus dubius, Harris' Cat.

Norton, Bost. Jour. vii, 1860, 240, 10, ♀.

Black; antennæ piceous, basal joints yellow, the fifth and the three apical segments of tergum yellow. Length 0.45. Br. wings 0.90 inch.

♀. Color black; antennæ piceous, the basal joint pale; head wide, indistinctly piceous about the orbits; clypeus produced, angulate; labrum rounded; clypeus and beneath, scutellum, edge and sides of basal plates, a spot above posterior coxæ, the fourth and the three apical segments of tergum yellow; tegulæ piceous; legs piceous yellow, darkest (in one case black) on femora above and on base of tibiæ; coxæ black, at tip yellow; trochanters yellow; wings clouded, nervures and apex of stigma blackish; basal half of stigma and costa piceous yellow.

Mass., (Harris' Coll.)

This may be a variety of *A. basilaris*.

4. *Allantus annularis*, n. sp.

Black; base of antennæ, mouth, cheeks, tegulæ, anterior angle, two spots on pleura, scutel and post-scutel, basal plates and a band or fascia on each segment of abdomen yellow. Length 0.40. Br. wings 0.80 inch.

♀. Shining black; abdomen shorter and more cylindrical than in

A. basilaris; antennæ short and stout as in *Selondria*; head polished; basal joint of antennæ and second joint beneath, two oval spots above their base, nasus and mouth beneath, lower half of cheeks, tegulæ, anterior angle, a large triangular spot on pleura, a round spot above posterior coxæ, scutel and post-scutel, basal plates, an interrupted fascia on first and second segments of tergum, an irregular band on fourth and fifth, the whole of fourth, sixth and seventh segments and apex of tergum, and the fourth segment of venter straw-yellow, those on the tergum having a rufous tinge; legs yellowish; the basal half of coxæ, the upper apical half of posterior femora, the tips of all the tibiæ and tarsi black; patellæ black. Wings slightly clouded, nervures black, base of stigma and costa ferruginous.

♂. The male has the basal half of the first and second segments, most of the third, and all the fourth segments of tergum and all but the two apical segments of venter pale yellow, remainder black.

Cape Mendocino, Cal., (Cambr. Mus.) Collected by A. Agassiz, Jr.

This is much like *A. basilaris*, but is smaller, the abdomen shorter and less compressed, &c.

5. *Allantus interruptus*, n. sp.

Black; two dots above antennæ, the mouth below, cheeks, tegulæ, collar, a spot above hinder coxæ, scutel, basal plates, and an interrupted band on all but the three apical segments of tergum yellowish. Length 0.40. Br. wings 0.80 inch.

♀. Quite short and compressed, shining black; antennæ moderate, of one color; head polished; two oval dots above antennæ, nasus and mouth below, cheeks, tegulæ, collar, a spot above hinder coxæ, scutel, basal plates, a slender line on each side above, a fascia, interrupted in middle, on the first, second, third, fourth and fifth segments of tergum, the sixth, seventh and apex above and beneath straw-yellow; legs yellowish; the coxæ, a line down the upper side of all the femora and the upper and lower tips of tibiæ black; wings hyaline, slightly clouded, nervures black, base of stigma pale.

Cape Mendocino, Cal., (Cambr. Museum. Coll. by A. Agassiz, Jr.)
One ♀.

The abdomen is quite short and stout.

6. *Allantus maximus*, n. sp.

Black; the mouth, collar, scutel, spot above the four hinder coxæ, and a band on the fourth and fifth segments of abdomen yellowish. Length 0.54. Br. wings 1.08 inch.

♀. Thorax and abdomen very wide. Antennæ short, stout, tinged with ferruginous near the middle; head very large, as wide as thorax,

polished, the space above ocelli punctured; thorax dull, with dense punctures; nasus deeply emarginate, mandibles very wide and strong, mostly white, apex black; nasus, labrum, collar, (tegulæ black) scutel, a spot above each of the four hinder coxæ, and a band covering the third and fourth segments of abdomen, yellow, (on the abdomen tinged with orange); legs black at base, the anterior femora before, the upper half of intermediate femora and the parts beneath, yellowish; tips of posterior tibiæ black; wings smoky yellowish, stigma, costa and basal nervures black.

Washington Territory, (Baron Osten Sacken).

One ♀. The abdomen is very long and stout, making this much larger than any other of our species.

7. *A. uncinotus*.

Allantus uncinotus, Norton, Proc. Ent. Soc. Phil. iii, 1864, 9 17, ♀ ♂.

Black; a wide annulus on antennæ, mouth, collar, scutel, third and fourth segments of abdomen and lower half of legs white. Length 0.47. Br. wings 0.92 inch.

♀. Body long, cylindrical; antennæ not as long as thorax, third joint nearly as long as fourth and fifth, color black, the fourth to the eighth inclusive, white, apical joint brownish; head rugose; clypeus notched, labrum conic; both, with the base of mandibles, a wide mark on collar, upper half of scutel, a spot on each side of basal plates and an adjacent spot at base of posterior coxæ, the third and fourth segments of abdomen pale straw-yellow; thorax dull, with fine, separated punctures; legs black above the knee joints, the whole apical half of anterior femora, apical half of medial femora above and the tibiæ and tarsi pale yellow; the tips of posterior tibiæ blackish; tips of the four anterior tibiæ, and all the tarsi reddish. Wings clouded, apical half darkest, nervures black, stigma and costa brown.

♂. The male has the fourth and fifth joints of antennæ black above, spot on collar small, the sides of first and second and all of the third segments of abdomen, except a spot on its apex above, yellowish.

Rocky Mts., Colorado, ((Coll. Am. Ent. Soc.) Three ♀, three ♂.

Species not determined.

8. *A. obesus*.

Allantus obesus, Say, Harris' Cat.

Norton, Bost. Jour. vii, 1860, 260, ♂.

Black; body stout; wings fasciate. Length about 0.35 Br. wings 0.74 inch.

♂. Shining black; thorax wide; abdomen short and stout; head narrower than thorax, coarsely punctured; vertex surrounded by an oval ridge, inclosing the anterior ocellus; antennæ moderate, third

joint long; ocelli pale; face immaculate; palpi piceous at tip; clypeus moderately emarginate; thorax rough, immaculate; two pale dots behind scutellum; legs yellow; intermediate femora at tip above, posterior coxæ at base, apical half of femora and tibiæ and all the nails black; wings hyaline; nervures dark brown; stigma inflated, black; a broad, brownish fascia upon superior pair crossing the second and the second and third submarginal cellules.

Massachusetts, (Harris' Coll.)

One imperfect specimen, the upper half of abdomen being wanting.

Not seen since first described. It probably belongs to *Dineura* or *Sciapteryx*.

50. **MACROPHYA**, Dahlb.

Macrophya, Dahlb.

Hartig, Die Blattw. 290, iv.

Tenthredo (All), Fam. III, Klug, Berl. Mag. vii.

Wings with two marginal and four submarginal cells, the second and third each with a recurrent nervure; bullæ as in *Allantus*; under wings with two middle cells.

Antennæ 9-jointed, either shorter than beyond base of abdomen, somewhat thickened in middle or longer than base of abdomen, setaceous.

Body as in *Allantus*.

Legs as in *Allantus*, except the hinder coxæ, which are unusually large, reaching as far as the edge of the fourth abdominal segment.

Table to assist in determining the Species.

Section 1.

Antennæ hardly longer than to base of abdomen, somewhat thickened in the middle.

Tribe 1.

Lanceolate cell with oblique cross line.....1, **excavatus**.

Tribe 2.

Lanceolate cell with very short, straight cross line or closed in middle.

A. Antennæ wholly black.

a. Scutellum pale.

X. Abdomen black, posterior tibiæ banded.....3, **epinotus**.

Spot on pleura4, **pulchella**.

b. Scutellum black.

Abdomen black, posterior tibiæ banded.

1. Spot on pleura.....5, **lineata**.

2. All the coxæ pale, tarsi pale.....2, **incertus**, ♀.

3. Hinder coxæ pale, tarsi pale.....6, **flavicoxæ**.

4. " " mostly pale, tarsi black.....8, **pannosus**.

5. " " black, " "9, **proximata**.

- ††. Posterior tibiæ with an outer pale line or spot.
6. Hinder coxæ black.....10, *externus*.
 7. All the coxæ with a white spot.....11, *tibiator*.
- †††. Posterior tibiæ black.
8. All the coxæ with a white spot, hinder tarsi black.....12, *albomaculatus*.
 9. Hinder coxæ with a white spot, hinder tarsi black.....7, *incertus*, ♂.
 10. Hinder coxæ black above.....13, *pumilus*.
 11. " legs black.....14, *fuliginus*.
- XX. Abdomen rufous or banded with rufous.
1. Wings hyaline.....15, *dejectus*.
 2. " obscure.....29, *fumator*.
 5. Spot on pleura; legs black and yellow.....28, *trosulus*.
- XXX. Abdomen banded with white.....2, *pluricinctus*.
- B. Antennæ pale beneath.
1. Abdomen white banded.....18, *zonalis*.
 2. " " - beneath.....19, *californicus*.
- C. Antennæ at tip pale.
- a. Scutellum pale.....16, *niger*.
 - b. " black.....17, *trisyllabus*.
- D. Antennæ at tip and base pale.
1. Abdomen rufous.....20, *varius*.
 2. " " black and white.....21, *eurythmia*.
 3. " " a white spot on pleura.....22, *fascialis*.
- E. Antennæ pale at base.
1. Abdomen banded with rufous on 4th segment.....23, *bifasciatus*.
 2. " " " " " and 5th "24, *formosus*.
 3. " " " " or rufous, legs rufous and yellow, spot on pleura.....27, *goniphorus*.
 4. Abdomen black, femora black banded.....26, *intermedius*.
 5. " " " pale25, *cestus*.

Section 2.

Antennæ longer than to base of abdomen, setaceous.....30, *omega*.

Section I.—(*Macrophya*,) Hartig.

Antennæ hardly longer than base of abdomen, thickened in middle.

Tribe 1. Hartig.

Lanceolate cell open at the shoulder, with oblique cross line.

1. *M. excavatus*.

Allantus excavatus, Norton, Proc. Ent. Soc. Phil. i, 1861, 143. ♀.

Bost. Proc. 18, 118.

Black; base of antennæ, collar, basal plates and hinder tibiæ, except at apex, straw-yellow. Length 0.39. Br. wings 0.79 inch.

♂. Body short and stout; thorax wide; antennæ rather enlarged in middle, diminishing toward apex, first joint nearly twice as long as second, obliquely truncate, third nearly as long as fourth and fifth; head and thorax wide and large, covered with deep pits, as in *Dolerus*, third joint of maxillary palpi short; a whitish spot in middle of lab-

rum; collar, a spot below, basal plates, apex of abdomen and (sometimes) extreme edges of four apical segments yellowish; abdomen short, cylindrical, a rufous spot on each side of first segment; legs black; tips of coxæ, trochanters, base and apex of four anterior femora, their tibiæ, posterior tibiæ, except at apex, and base of first tarsal joint pale yellow; tips of the four anterior tibiæ and the tarsi brown; inner claw tooth not as large as outer; apical half of wings clouded, changing into smoky yellow, basal half of stigma pale. Under wings with one middle cell, the lower nerve of lanceolate cell of under wing coinciding with cross nervure above.

Var. a. No bands upon edges of segments of tergum.

Mass., Penn., Md., Ill.

This was first described as an *Allantus*, because its femora are shorter than is usual in *Macrophya*, but they are quite stout, and in form and general appearance this approaches nearer to *Macrophya* than *Allantus*.

Tribe 2.*

Tribes 2 and 3. Hartig.

Lanceolate cell open at shoulder, with short, straight cross line, or rarely closed or closed with a separation between the two areas.

2. *M. pluricinctus*.

Macrophya pluricinctus, Norton, Bost. Proc. ix, 1862, 118. ♀ ♂,

Black; edge of collar, scutellum and bands on abdomen white. Length 0.28. Br. wings 0.60 inch.

♀. Body short and stout, black; antennæ stout, as in *Allantus*; clypeus hardly emarginate; face black, palpi partly white, tegulæ, edge of collar, spot on the front of scutellum, edge of basal plates and a band at edge of each segment of abdomen white; tips of all the femora, the four anterior tibiæ and tarsi beneath, tips of coxæ and the upper side of posterior legs white; the middle of four posterior tibiæ encircled with white, extreme tips black; tarsi partly black. Wings hyaline, stigma white at base; lanceolate cell with short, straight cross line.

♂. The male differs only in having the bands interrupted on the middle of tergum, and the posterior femora with a white line above and beneath.

San. Mat., Cal. (Cambr. Mus.)

Two specimens. The abdomen is short, as in *Selandria*.

* Hartig here makes two tribes. The second having a straight cross line in the lanceolate cell—the third having the lanceolate cell closed in middle. But some of our species present both peculiarities in different individuals, and others differ in different sexes. The two tribes are here united, but the form of the lanceolate cell is generally specified in the description.

3. *M. epinotus*.

Allantus epinotus, Say, Bost. Jour. i, 1835, 215, 1. ♀ ♂.

Norton, Bost. Jour. vii, 257, 42.

Allantus sambucci, Harris' Cat.

Macrophya epinotus, Norton, Bost. Proc. ix, 118.

Black; mouth, collar, scutel and basal plates white, posterior tibiæ banded. Length ♂ 0.28. Br. wings 0.64 inch. Length ♀ 0.36. Br. wings 0.70 inch.

♀. Body short, thorax enlarged, as in *M. excavatus*; antennæ black, stout, as in *Selandria*, enlarged toward base; head and thorax dull, with close punctures, coarsest on pleura; nasus wide, deeply notched; labrum truncate; both, with a spot on mandibles, two dots, sometimes minute, on edge of occiput back of ocelli, a spot on tegulæ, collar, most part of scutel and of basal plates, a spot on hinder coxæ, white; abdomen short, cylindrical; legs black; all the trochanters, the anterior femora beneath, their tibiæ, except at tip, the medial femora at base and tip beneath, and their tibiæ, except at tip, the knee joint of posterior femora, (a line beneath these femora sometimes white or rufous or obsolete), a band on their tibiæ and all the tarsi yellowish; each tarsal joint tipped with black.

Var. a. ♀ ♂. Scutel black, a black line down the four anterior tibiæ above. The male has the spots back of ocelli wanting. (Conn.)

Var. b. ♀ ♂. Scutel pale, spots back of ocelli wanting, a black line down the four anterior tibiæ above, a dot on pleura. (Colorado.)

Maine, Massachusetts, Connecticut, New York, Illinois, Colorado.

4. *M. pulchella*.

Tenthredo (All) pulchella, Klug, Berl. Mag. viii, 1814, 121, 89.

Allantus flavolineatus, Norton, Bost. Jour. vii, 259, 45.

Macrophya pulchella, Norton, Bost. Proc. ix, 118.

Black; mouth, collar, scutel, a stripe on pleura, part of legs, and a band on posterior tibiæ yellow. Length ♂ 0.25. Br. wings 0.55 inch. Length ♀ 0.32. Br. wings 0.65 inch.

♀. Body short, not so stout as in *M. epinotus*; antennæ longer than base of abdomen, not very stout; nasus incurved; labrum truncate, punctured as in last species; mouth, tegulæ, collar, apex of scutel, a broad stripe across pleura, extreme edge of basal plates and tip of anal segment pale yellow; legs pale yellow; coxæ yellow, a black line down the four anterior femora and tibiæ above; posterior pair black below the middle of femora, with a yellow band on tibiæ. Wings faintly smoky, nervures dark, stigma pale at base; lanceolate cell with short, straight cross line.

♂. Legs paler; only a slender black line down the four anterior tibiæ above, sometimes obsolete. The spot on scutel is sometimes wanting and the band on hinder tibiæ incomplete.

Var. a. ♂. The posterior tibiæ black.
Connecticut, Illinois, Georgia, (Klug).

5. *Macrophya lineata*, n. sp.

Black; mouth, tegulæ, collar, stripe on pleura, legs (in part) and a band on hinder tibiæ yellow. Length 0.30. Br. wings 0.60 inch.

♀. Body short, moderately stout; antennæ as in *M. pulchella*; head as wide as thorax; mouth, tegulæ, collar and stripe across pleura straw-white; legs black; tips of coxæ, trochanters, the anterior pair before, the intermediate tibiæ, except at tip, base of hinder femora, a band in middle of their tibiæ, and all the tibiæ, except at tip, yellow; wings faintly clouded, stigma and costa black; lanceolate cell closed.

Farmington, Conn. One ♀.

6. *M. flavicoxæ*.

Allantus flavicoxæ, Norton, Bost. Jour. vii, 1860, 258, 43. ♀.

Macrophya flavicoxæ, Norton, Bost. Proc. ix, 118.

Black; mouth, tegulæ, collar, coxæ, and a band on posterior tibiæ yellow. Length 0.32. Br. wings 0.65 inch.

♀. Body moderately stout; antennæ as long as to base of thorax, compressed in middle; head wide, polished, punctured, as in *M. pulchella*; nasus incurved, labrum rounded, both, with tegulæ and collar, yellow; legs mostly pale yellow; a band on the four anterior femora, a slender line down the tibiæ above, (sometimes wanting on medial pair), their tips and tips of their tarsi, apical half of posterior femora, base and apex of their tibiæ, base of their first tarsal joint and apex of the last, black; lower half of hinder coxæ waxen, hinder tibial spurs very long, claws large, inner tooth near the tip; wings faintly clouded, nervures blackish; lanceolate cell closed.

♂. All the legs mostly pale yellow; apex of posterior femora and their tibiæ black.

Me., Conn., N. Y., N. J., Va., Ill.

Common. All the specimens examined but one, are females.

7. *M. incertus*.

Allantus incertus, Norton, Bost. Jour. vii, 1860, 258, 44, ♂.

Macrophya incertus, Norton, Bost. Proc. ix, 118.

Black; mouth, tegulæ, collar and legs pale yellow, apex of posterior femora and their tibiæ black. Length 0.30. Br. wings 0.60 inch.

♂. Body rather slender, apex of abdomen rounded; antennæ and punctures as in *M. flavicoxæ*; clypeus deeply incurved, enclosing labrum; both, with the tegulæ, collar and legs pale yellow; a white spot on hinder coxæ near the apex; a slender line down the anterior tibiæ and tips of their tarsi; most of basal half of hinder coxæ, apical half of their femora, their tibiæ, base of first tarsal joint and apex of the

last black; hinder spurs long; wings very faintly clouded; lanceolate cell closed.

♀. The female resembles the male in every respect, except that the hinder tibiæ are banded with yellow in the middle.

Connecticut, New York, Illinois.

About fifty males and one female.

8. *M. pannosus*.

Allantus pannosus, Say, Bost. Jour. I, 1835, 217, 6.

Norton, Bost. Jour. vii, 257, 40.

Macrophya pannosus, Norton, Bost. Proc. ix, 118.

Black; mouth, collar, coxæ and most of legs white, with a black line down four anterior legs; hinder legs black, with a spot on coxæ, trochanters and a band on tibiæ white. Length 0.40. Br. wings 0.70 inch.

♂. Body black; nasus deeply emarginate, white; labrum sub-orbicular, truncate, sub-emarginate before, blackish on the disk or within the emargination of the nasus; mandibles black at tip; maxillary palpi dusky in the middle of the basal joint; thorax and posterior edge of the collar white; wing scale blackish; wings hyaline, nervures black; carpus on the inner half dull wax-yellow; pleura immaculate; feet, anterior pairs white before, with a black line behind; coxæ white; tarsi white, with dusky incisures; posterior pair black, incisures of the thighs, band on the tibiæ and base of the ultimate joints of the tarsi white; coxæ white, with a black spot above and beneath. Length one-fourth of an inch.

♀. Coxæ with a large black spot; posterior tibiæ with a white longitudinal line. Length three-tenths of an inch."

Var. ♀. The basal plates white.

Maine, New York, Maryland. Indiana, (Say.)

All the specimens examined have the hinder coxæ black, with a large white spot above and beneath. The posterior tibiæ have not a "white longitudinal line," but a whitish band, almost interrupted behind.

9. *Macrophya proximata*, n. sp.

Black; mouth, tegulæ, edge of collar and of basal plates, anterior legs beneath and a band on posterior tibiæ yellow-white. Length 0.39. Br. wings 0.76 inch.

♀. Body short, cylindrical; head and pleura with dense punctures; antennæ as in *M. flavicoxæ*; nasus deeply incurved, and with the mouth beneath, tegulæ, collar and basal plates straw-yellow; legs black; tips of coxæ, trochanters and base of femora, anterior legs beneath, medial knee joints, and tibiæ (except at apex) and tarsi (except their

tips) and a band in middle of hinder tibiæ yellow; hinder tarsi black; wings hyaline, nervures black; lanceolate cell closed.

Connecticut. One ♀.

This resembles *M. lineata*, but has no stripe across pleura, and its hinder tarsi are black.

10. *M. externus*.

Allantus externus, Say, West. Quart. Rep. II, 1823, 72, ♀.

Norton, Bost. Jour. vii, 257, 41.

Tenthredo externus, Norton, Bost. Proc. ix, 121.

"Black; tibiæ white on the exterior side. Length nine-twentieths of an inch.

Body deep black; head with a spot each side on the nasus and base of mandibles, white; wings fuliginous; nervures black; thighs at tip above, incisures of the coxæ, exterior side of the tibiæ and tarsi white, posterior feet robust."

Missouri.

This is like the *M. tibiator*, having the mouth, edge of collar, edge of basal plates, trochanters, four anterior tibiæ and tarsi below yellow-white, and a line on the hinder tibiæ about two-thirds as long as tibia; hinder tarsi white above, tips of all the other tarsi black, first joint of hinder tarsi as long as all the rest. The head is quite wide. The specimens examined are not all as large as that of Say, being about 0.35—0.45 inch in length. Wings almost hyaline, lanceolate cell closed.

A variety has a short line in middle of hinder tibiæ and the hinder tarsi black.

Massachusetts, Connecticut.

11. *M. tibiator*.

Macrophya epinotus, Var. *b*, Norton, Bost. Jour. vii, 257, 42.

Macrophya tibiator, Norton, Proc. Ent. Soc. Phil. iii, 1864, 10, 20.

Black; two dots back of ocelli, obsolete spots on nasus; edge of collar and of basal plates, a line down all the coxæ, and legs below knees, interrupted on every joint of hinder pair. Length 0.28 Br. wings 0.66 inch.

♀. Body short and stout; head wide as thorax, densely punctured; antennæ moderate, compressed in middle; two minute dots on edge of occiput back of ocelli, an indistinct spot on each side of both nasus and labrum, spot on mandibles, a slender line around the edge of collar and basal plates white; a slender line down each of the coxæ, forming a spot on hinder pair, joints of trochanters, (hinder trochanter entirely), a line down the anterior legs and down the medial pair below the knees white, with the tips of the tibiæ and tarsi black; a short oblique line in middle of hinder tibiæ and spot on each joint of tarsi white; tarsal claws apparently bifid; apical half of wing fuliginous; lanceolate cell closed.

♂. The male has the abdomen slender and longer.

Var. a. ♀ ♂. The dots back of ocelli wanting; mouth mostly white.

Four ♀, five ♂.

Maine, Massachusetts, New Jersey, Maryland, Virginia, Illinois, Colorado.

This is smaller than *M. externus*, and differs in having a white line down all the coxæ and a short oblique line on the hinder tibix. A specimen from Illinois has the spot on hinder tibix extending around it. It is possible that this species is a variation from *M. epinotus*, Say.

12. *M. albomaculatus*.

Allantus albomaculatus, Norton, Bost. Jour. vii, 1860, 256, 39. ♀ ♂.

Macrophya albomaculatus, Norton, Bost. Proc. ix, 118.

Black; edge of collar, a spot on all the coxæ, trochanters and a line down anterior legs before, white. Length 0.35—0.37. Br. wings 0.65—0.70 inch.

♀. Body stout; abdomen not very short; head wide, closely punctured; antennæ as long as to base of abdomen; nasus deeply incurved, color white, edged with black; labrum, base of mandibles, edge of tegulæ and of collar yellow-white, sometimes tinged with rufous; legs black; a large white spot on hinder coxæ above and a more slender line on both the anterior pair; all the trochanters, anterior legs before, (sometimes also the medial), tips of medial femora reddish-white; hinder tibix and tarsi black, spurs of hinder tibix long, claws apparently bifid; wings faintly obscured.

♂. Body slender; the four apical joints of antennæ dimly ferruginous beneath; nasus not deeply emarginate, black; labrum piceous; the four anterior legs white beneath, their tarsi white, tipped with black; no white spot on the four anterior coxæ; lanceolate cell closed.

Canada, Maine, Connecticut, Maryland.

13. *Macrophya pumilus*, n. sp.

Black; the four anterior legs white, varied with black, hinder trochanters and coxæ white. Length 0.28. Br. wings 0.54 inch.

♂. Black; antennæ short and stout, as in *Allantus*; head without obvious depressions about ocelli; vertex punctured, below ocelli rugose; nasus but slightly incurved; labrum wide, truncate; color of both waxen; all the coxæ, a wide line on the four anterior femora and a slender line on the anterior tibix above, the apex of medial tibix and of all the anterior tarsi, hinder coxæ above and the hinder legs below trochanters, black, remainder white; wings hyaline, apical half faintly clouded, nervures blackish; lanceolate cell closed.

Cape Mendocino, Cal., (Cambr. Mus. Coll. by A. Agassiz, Jr.)

This has shorter and stouter antennæ than *M. albomaculatus*, and its hinder coxæ are black above, &c.

14. *Macrophya fuligineus*, n. sp.

Black; anterior legs pale; wings obscure, their basal third clear. Length 0.48. Br. wings 0.94 inch.

♀. Body stout; abdomen long and cylindrical; head and thorax dull, with dense punctures; scutellum coarsely pitted; antennæ thickened in middle, compressed; nasus coarsely pitted; mouth and palpi black; a white spot on mandibles; a slender white line across tegulæ, remainder of body black; legs black, the anterior femora and tibiæ with a white line before; tips of hinder trochanters and base of final joint of all the tarsi white; wings blackish subhyaline, with clear spot at the base; the basal half of under wings hyaline, stigma and costa brownish; lanceolate cell with short, straight cross line.

Illinois, (Coll. Am. Ent. Soc.) One specimen.

The coxæ are large, but hardly longer than in some species of *Tenthredo*.

15. *M. dejectus*.

Allantus dejectus, Norton, Bost. Jour. vii, 1860, 249, 27, ♂.

Macrophya dejectus, Norton, Bost. Proc. ix, 118.

Black; a piceous band at base of abdomen. Length 0.43. Br. wings 0.80 inch.

Body moderately stout, abdomen quite long; antennæ moderate, compressed in middle; nasus deeply incurved; edge of labrum, the palpi and the three basal segments of abdomen piceous, the latter most distinct at sides; legs black, with the four anterior tibiæ beneath and the tarsi dull piceous; wings faintly clouded, nervures black, stigma piceous, second submarginal cell receiving the recurrent nervure nearer the third cell than usual; lanceolate cell with short, straight cross line.

Brooklyn, N. Y., (J. Akhurst.)

16. *M. niger*.

Allantus niger, Norton, Bost. Jour. vii, 1860, 239, 6, ♀.

Macrophya niger, Norton, Bost. Proc. ix, 118.

Black; antennæ semi-annulate with white near the tip; scutellum black, coxæ white spotted. Length 0.37. Br. wings 0.75 inch.

♀. Body long, shining black; antennæ rather long, apical half of the fifth, sixth, seventh, eighth and base of ninth articles white on upper side; nasus deeply incurved, labrum truncate; disk of labrum, a spot on mandibles and a large spot on posterior coxæ white; a pale yellow line on anterior legs before; on the apical half of medial femora and (indistinctly) down their tibiæ and tarsi and the hinder trochanters white; wings hyaline, nervures dark, stigma brown; lanceolate cell closed.

Farmington, Conn.

About twenty females. No males taken.

17. *M. trisyllabus*.

Allantus trisyllabus, Say, Harris' Cat.

Norton, Bost. Jour. vii, 1860, 238, 5, ♀.

Macrophya trisyllabus, Norton, Bost Proc. ix, 118.

Black; a band on antennæ, collar, V-spot, scutel and spot on coxæ white. Length 0.40. Br. wings 0.80 inch.

♀. Body long, abdomen cylindrical; antennæ rather long, apex of fifth, the sixth, seventh, eighth and base of ninth articles white; nasus produced and not deeply notched; edge of nasus, disk of labrum, a spot at base of mandibles, palpi, edge of collar, V on anterior lobe, scutel, a line at apex of metathorax, edge of basal plates and of first four segments of tergum pale yellow; legs black, a large spot on posterior coxæ white; a narrow line on most of four anterior legs beneath, all the trochanters, and (in some cases) the joints of the tarsi yellowish; wings slightly clouded, nerves black; lanceolate cell closed.

♂. The male has the venter more or less white; the four anterior legs beneath and the posterior legs below femora white; all the trochanters and anterior legs above, yellowish.

Canada, Mass., Conn., N., Y., Ill., English River, Saskatchewan, (Smiths. Inst.) Mexico.

Common. The females are abundant, the males rare. In some cases the V-spots and all marks back of the scutellum are indistinct or wanting; sometimes the ventral segments are tipped with white.

18. *M. zonalis*.

Macrophya zonalis, Norton, Proc. Ent. Soc. Phil. iii, 1864, 11, 21. ♀.

Black; the tips of antennæ, mouth, collar, V-spot, scutel, three spots on pleura and a band on each segment of abdomen white. Length 0.44. Br. wings 0.92 inch.

♀. Body long, shining black; antennæ long, apex of fifth and the fourth apical joints white, tip brown; head polished, having obsolete punctures; nasus slightly incurved; labrum almost truncate; a spot above ocelli, a dot below antennæ, nasus and mouth, collar, V-spot, scutel, a band at base of each segment of abdomen, enlarged at sides and beneath, a spot below the anterior wings, a cross stripe below the posterior wings and a triangular spot in middle of pleura, white; legs black, the two anterior pair and the posterior femora white beneath, and a large white spot on posterior coxæ; the four apical tarsi of four anterior legs white, their tips black; posterior tarsi black, their first joint nearly as long as all the rest; wings faintly clouded on their apical half, nervures blackish.

Massachusetts, (Coll. Am. Ent. Soc.) One specimen.

19. *M. californicus*.

Tenthredo californicus, Norton, Proc. Ent. Soc. Phil. i, 1862, 198. ♀.

Greenish-white; base of antennæ, six lines on thorax and scutel white; antennæ, head, and middle of thorax and abdomen black. Length 0.36. Br. wings 0.68 inch.

♀ ♂. Body long, as in *Tenthredo*; color greenish-white; antennæ moderate, slender, as in *Tenthredo*, third joint longer than fourth; color black above, basal joint pale, with a large black spot above; flagellum pale beneath; head as wide as thorax; eyes widely separated; nasus wide, slightly incurved; a large black spot on vertex extending nearly to antennæ, enclosing two oval white dots about lower ocellus, back of head black; remainder of head of one color; thorax black above, with two lines on front lobe, one on the front of each side lobe and one on the back of each, diverging from scutel, the scutel and post-scutel white; a wide black stripe, sub-interrupted at joints, runs down the middle of tergum; the whole body beneath immaculate; legs of same color, a black spot on hinder coxæ and a slender line down all the legs above, black; tarsi pale, tipped with black; wings hyaline, apical half clouded, nervures black, stigma and costa green; lanceolate cell with straight cross line.

California, (Coll. Am. Ent. Soc.); English River, Lake Satkatchewan, (Smiths. Inst.) 3 ♀, 1 ♂.

The coxæ are those of *Macrophya*, the antennæ and form of abdomen that of *Tenthredo*.

20. *M. varius*.

Allantus varius, Norton, Bost. Jour. vii, 1860, 240, 8.

Macrophya varius, Norton, Bost. Proc. ix, 118.

Black; antennæ at base rufous, their apex, mouth, tegulæ, collar, V-spot, scutel and post-scutel and a spot on coxæ yellow, abdomen rufous. Length 0.37. Br. wings 0.75 inch.

♀. Body rather long, abdomen cylindrical; antennæ rather long, the two basal joints rufous, the four apical joints yellowish; a double spot back of ocelli, spot between antennæ, mouth below antennæ, collar, V-spot, scutel, post-scutel, a spot behind and a spot on hinder coxæ white, tegulæ rufous; basal plates and abdomen dark chestnut; legs yellowish rufous; the trochanters, base of femora, anterior pair before and the middle of all the tarsi whitish; apex of all the tibiæ and the claws blackish; basal joint of hinder tarsi very long; wings faintly smoky; lanceolate cell closed.

Var. ♀. A dot at summit of inner orbits and the basal plates black. Farmington, Conn. Two specimens.

21. *Macrophya eurythmia*, n. sp.

Black; base of antennæ rufous, their tips, mouth, dots back of ocelli, collar, V-spot, scutel and behind, spot on coxæ and sides of abdomen white. A rufous band on abdomen. Length 0.40—0.44. Br. wings 0.80—0.84 inch.

♀. Body rather long, compressed; antennæ long, basal joint rufous, the four apical joints white, the apex black; two dots back of ocelli, nasus and beneath, yellow, tegulæ, collar, V-spot, scutel, post-scutel and cross line behind, a large spot on hinder coxæ pale yellow; edges of second, third and fourth segments of venter and of tergum at sides white; the second, third and fourth segments of abdomen and tip of anal segment brownish rufous, remainder black; base of all the coxæ black, their tips, trochanters and basal third of femora, the anterior, and most of medial legs before, yellow, tarsi pale yellow, tipped with rufous; the four anterior femora and tibiæ above, and tips of their tibiæ, apical two-thirds of hinder femora, their tibiæ and base of first tarsal joint brownish-red, sometimes blackish; a small white dot near outer tip of the hinder tibiæ; wings smoky yellow, stigma piceous, nervures brownish; lanceolate cell closed.

♂. The male has the rufous band upon tergum almost obsolete, a black line down the four anterior femora, and the apical third of hinder femora and most of tibiæ reddish-black, the white dot near the tip, as in female.

English River, H. B. T., (Smiths. Inst., R. Kennicott.) 5 ♀, 1 ♂.

This is much like *M. varius*. The antennæ are sometimes black at base and the white marks upon venter very indistinct.

22. *Macrophya fascialis*, n. sp.

Black; antennæ at base and tip, orbits, mouth, collar, V-spot, scutel and behind, spots on pleura and coxæ white, abdomen in part dark rufous. Length 0.36. Br. wings 0.78 inch.

♀. Body rather long, black; antennæ long, the first and the four apical joints of antennæ yellow; a spot back of ocelli, the orbits and cheeks, space about and beneath antennæ, anterior angle, V-spot, scutel, post-scutel and a line behind, edge of basal membrane, a large spot on pleura and a smaller one behind, the four anterior coxæ and a spot on hinder coxæ white; tegulæ and abdomen dark rufous; legs yellowish rufous; the posterior femora and tibiæ black at apex; wings hyaline, apical half of stigma waxen.

Farmington, Conn. One specimen.

23. *M. bifasciatus*.

Allantus bifasciatus, Say, West. Quart. Rep. II, 1823, 72,
Norton, Bost. Jour. vii, 251, 30.

Allantus medius, Harris' Cat.

Macrophya medius, Norton, Bost. Proc. ix, 113.

Macrophya bifasciatus, Norton, Bost. Proc. ix, 118.

"Black; tergum with a white band at base and a rufous one in the middle. Length seven-twentieths of an inch.

♀. Body black, nasus white; labrum and palpi dull whitish; thorax with a yellow line before each wing; scutel yellowish; wings dusky; nervures brown; feet white; tips of the posterior thighs and their tibiæ black; tergum with a white band at base and a rufous one in the middle," ("on the fourth segment. Long's Exp.")

Arkansas.

Say does not mention the pale basal joint of antennæ, but as this is common to all the species of this class, it is to be presumed that this is at least pale beneath.

24. *M. formosus*.

Allantus formosa, Klug, Berl. Mag. viii, 1814, 115, 82. ♀.

Allantus bicinctus, Norton, Bost. Jour. vii, 241, 11. ♀ ♂.

Macrophya bicinctus, Norton, Bost. Proc. ix, 118.

Black: base of antennæ, mouth, collar, V-spot, scutel and basal plates yellow, the fourth and fifth segments of tergum rufous. Length 0.35—0.40. Br. wings 0.70—0.80 inch.

♀. Body long, somewhat flattened; antennæ rather long, compressed in middle, slightly serrate; face coarsely punctured; nasus deeply arcuate, labrum almost truncate; the basal joint of antennæ, a spot between antennæ, face beneath, tegulæ, anterior angle, V-spot, scutel and post scutel, basal plates, a spot on pleura and line from base of hinder wings straw-yellow; a rufous band on third, fourth and part of fifth segments of tergum; legs yellow, the base of posterior coxæ, apex of their femora and of their tibiæ and the claws black; wings smoky yellowish, stigma waxen; lanceolate cell with short cross line or closed.

♂. The rufous band on the tergum is wanting in the male.

Var. All the apical segments of the abdomen rufous beyond the third. (Mass.)

Maine, Mass., Conn., N. Y., Pa., Md., Ga., (Klug.) Florida.

25. *M. cestus*.

Allantus cestus, Say, Bost. Jour. i, 1835, 217, 5.

Norton, Bost. Jour. vii, 243, 13.

Macrophya cestus, Norton, Bost. Proc. ix, 118.

Black; base of antennæ, scutellum, basal plates, spot on pleura and most part of legs straw colored. Length 0.36. Br. wings 0.72 inch.

“♂. Body black, with large crowded punctures; antennæ, first and second joints yellow; nasus hardly emarginate, with a lateral whitish spot; thorax, with the posterior margin of the collar, white; pleura with a white spot on the anterior upper part; wings tinted with fuliginous, nervures black; carpal spot waxen-yellow, tergum with a dilated white band extending to the lateral sutures; feet white, a little varied with yellowish at the tips of the joints, thighs black at base beneath.

♀. Anal segments white; posterior coxæ at base black; posterior thighs in the middle and their tibiæ at tip black.”

United States.

The male not seen.

One female from Maine agrees with the above description. The scutellum is yellow; there is an indistinct pale band on the edge of each segment of tergum, a black band in the middle of all the femora, interrupted in the anterior pair before; the coxæ, apex of hinder tibiæ and of each tarsal joint black.

26. *M. intermedius*.

Allantus intermedius, Norton, Bost. Jour. vii, 1860, 242, 12.

Macrophya intermedius, Norton, Bost. Proc. ix, 118.

Black; base of antennæ, mouth, tegulæ, collar, scutel, basal plates, spot on pleura and legs mostly yellow, sometimes a rufous band on fourth segment of tergum. Length 0.30. Br. wings 0.60 inch.

♀. Body shorter than *M. cestus*, stout, black; head wide, densely punctured, eyes separated; antennæ short, compressed, the two basal joints pale beneath; nasus wide, incurved; nasus and mouth beneath, tegulæ, collar, scutel, basal plates and a spot on pleura yellow-white; a rufous band (sometimes wanting) on third segment of tergum; legs yellow, coxæ all yellow, the apex of hinder femora, of their tibiæ and of all their tarsi black; wings faintly clouded toward apex; lanceolate cell with short cross line or closed.

♂. The male exactly resembles female, except that the coxæ are mostly black. The antennæ are stouter and more compressed, tergum of one color.

Connecticut, Massachusetts, Kansas.

This differs from *M. cestus* in its white coxæ and femora without bands. Those with a rufous band on abdomen probably belong to next species.

27. *M. goniphorus*.*Allantus goniphorus*, Say, Bost. Jour. i, 1835, 215, 2.

Norton, Bost. Jour. vii, 243, 14.

Macrophya goniphorus, Norton, Bost. Proc. ix, 118.

Black; abdomen rufous; base of antennæ, mouth, collar, V-spot, scutel and spot on pleura yellow. Length 0.30. Br. wings 0.66 inch.

♀ ♂. Short, abdomen cylindrical; head and thorax black; antennæ longer than to base of thorax, enlarged in middle, the two basal joints yellow, with a black spot on upper side of each; head as wide as thorax; nasus deeply arcuate; labrum produced, truncate, both pale yellow; tegulæ, collar, V-spot, scutel, post-scutel, stripe on pleura and spot above, pale yellow; basal plates and abdomen rufous; the four anterior legs yellow, with a black line above; the hinder coxæ, except a black spot above, trochanters, a small oblique spot in middle of tibiæ and the tarsi yellow, their femora, tibiæ and basal half of first tarsal joint rufous, tips of anterior tarsi fuscous, claws apparently bifid; wings hyaline, nervures black, stigma and costa red-yellow; lanceolate cell closed.

Connecticut, Pennsylvania, Indiana, (Say.)

28. *M. trosulus*.*Allantus trosulus*, Say, MS. Harris' Cat.

Norton, Bost. Jour. vii, 1860, 244, 18.

Macrophya trosulus, Norton, Bost. Proc. ix, 118.

Black; mouth, tegulæ, collar, scutel and spot on pleura yellow; abdomen rufous; the two basal segments black. Length 0.30. Br. wings 0.60 inch.

♀. Body short; abdomen short, cylindrical; antennæ rather long, enlarged in middle; nasus deeply incurved, labrum truncate, both yellow; tegulæ, collar, scutel and stripe across pleura pale yellow; the basal plates and the first and second segments of abdomen black, remainder chestnut-red; legs pale yellow, sometimes reddish, the trochanters and spot on hinder coxæ white; a black line from middle of anterior tibiæ to feet; apical half of posterior femora, the tibiæ, except a yellow band in middle, and base of basal tarsus and claws black; wings faintly clouded toward apex; lanceolate cell closed.

Connecticut, Massachusetts.

A specimen in the Harris' Collection has the abdomen wholly rufous.

29. *Macrophya fumator*, n. sp.

Black; apical two-thirds of abdomen rufous; wings sub-violaceous. Length 0.30. Br. wings 0.60 inch.

♀. Dull black; antennæ stout; body stout; head wide; face shagreened below ocelli, crossed by a wavy ridge above antennæ; edge of nasus wide and truncate; abdomen dark rufous, its two basal segments

and apex black; coxæ half the length of abdomen, spurs of posterior tibiæ very long, legs black, anterior pair before and a spot on posterior tibiæ whitish; posterior tarsi ferruginous in part; wings subviolaceous, nervures black, lanceolate cell closed.

Cape Mendocino, Cal., (Cambr. Mus. Coll. by A. Agrssiz, Jr.)

It will doubtless be thought that, in this genus and in *Tenthredo*, an unnecessary number of species has been formed, especially as some of the variations seem very slight. But they are very distinct and appear to be permanent. At some future time, when our species are better known, they can probably be grouped to advantage by certain affinities of form and color, which are not so easy to define at present.

Section 2. (*Pachyprotasis*), Hartig.

Tenthredo (*All*), Fam. IV, Klug.

Antennæ longer than to base of abdomen, setaceous. Lanceolate cell with short, straight cross line or closed.

30. *M. (Pachyprotasis) Omega*, n. sp.

Black; two lines enclosing ocelli, mouth, cheeks, tegulæ, V-spot, scutel, three spots on pleura, a spot on pectus and most of venter white. Length 0.26. Br. wings 0.56 inch.

♀. Body rather stout, cylindrical, shining black; antennæ two-thirds the length of body, slender, third joint scarcely longer than 4th, the basal joint white beneath; two lines extending from sutures of vertex near occiput down inner orbits to mouth, two lines above antennæ, face below and cheeks, straw-white; tegulæ, hinder and lower edge of anterior angle, V-spot, scutel, a large irregular spot like an ω on pleura, spot on breast and part of venter straw-white; all the coxæ (except a slender line on hinder pair and their base above), the trochanters, the four anterior legs (with a black line above) and basal half of posterior femora whitish, remainder black; wings faintly clouded, lanceolate cell rather widely closed in middle.

♂. The male has the antennæ very long and slender, basal half white beneath, abdomen slender.

Massachusetts, (Coll. Am. Ent. Soc.); Connecticut, Labrador, (A. S. Packard, Jr.); Wisconsin and Lake Saskatchewan, (Smiths. Inst.)

Five specimens.

[TO BE CONTINUED.]

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ERRATA et CORRIGENDA.

Page 5, line 33, for particular read particularly.

8, line 7, for so speak read so to speak.

8, line 13, *dele* comma after to.

13, line 28, for syringaria read syringaria.

14, line 18, for Authros read Authors.

16, line 1, insert a semicolon after downwards.

26, line 15, for fluently read faintly.

26, line 21, for anterior read posterior.

27, line 13, for interal read internal.

50, line 19, for 171 read 179, 1.

50, line 21, for 671 read 674.

54, line 24 for Sel. read Serv.

63, line 23, for twelve pectoral read twelve abdominal.

64, line 3, *cæruleus* should be under heading A instead of B.

67, line 6, for 268 read 298.

69, line 3, for venter read vertex.

69, line 41, for *procera* read *poecila*.

71, to line 25 add the following references:—

Klug, Berl. Mag. vi, 300, 26. Lepel., Mon. Tenth. 48, 136.

73, line 1, for 249 read 240.

73, line 34, for *Pteroma* read *Pteronus*.

76, line 15, for the entire tarsi read the entire tarsi.

78, line 20, for *atripes* read *albipes*.

193, line 4, for Page 31 read Page 84.

204, line 3, for 0.22—.26 inch read 0.11—.13 inch.

224, lines 6 and 27, for Am. read Ann.

225, line 1, for piliform read filiform.

246, line 32, for *linutaria* read *limitaria*.

256, line 6, for s read is.

266, line 41, for 18 read ix.

286, line 7, for Plate IV read Plate V.

288, line 37, for 186, read 1862.

325, line 23, after dark insert blue.

340, line 11, for clean read clear.

345, line 1, for *lroea* read *loreæ*.

377, line 26, for *Lewisii* read *Lecontei*.